Attitude and ICT skills as determinants of utilisation of open educational resources by undergraduates in faculty of education, University Of Ilorin, Nigeria

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Abstract
This study investigates the attitude and ICT skills as determinants of utilisation of Open Educational Resources by undergraduates in the Faculty of Education, University of Ilorin, Nigeria. A descriptive survey design was adopted and a sample size of 385 was derived from a population of 10,609. A simple random sampling technique applied and a questionnaire was used to collect data. The statistical analysis used for the study is frequency count, percentages, mean and standard deviation. The findings showed types of OERs as Digital Tutorials, Digital Learning Objects, Open Journals, Open Textbooks, Online Modules, and Open Courseware were commonly available. Respondents developed a positive attitude (mean of above 2.16) towards OERs and possessed high levels of ICT skills, particularly in Microsoft Office, Computer Literacy, and Online OERs Skills, while their skills in Multimedia Applications were rated lower. Also, the findings revealed that OERs have enormous benefits such as improvement of the quality of education, reduce the information access

gap, and accelerate knowledge flow. Furthermore, the study revealed challenges such as low awareness of OERs, insufficient recognition of OER repositories and the need for OERs to support local languages and cultural values. The study concluded that undergraduates developed a positive attitude towards the utilisation of OERs despite challenges hindered their optimal usage. Among the recommendations are ICTs training to improve ICT skills particularly in areas where undergraduates are lacking should be organised by university management. In addition, OER content should be developed or adapted to support local languages and cultural contexts to enhance OER relevance and usability.

Introduction

The advent of Information and Communication Technologies (ICTs) has transformed and had a significant impact on businesses, healthcare and the educational sector among others in Nigeria, especially in teaching, learning, and research. The major product of ICTs that facilitate free and open access education is Open Educational Resources (OERs). The ICT serves as a platform to facilitate the emergence of any products of the fourth industrial revolution (4IR). The Fourth Industrial Revolution (4IR) brought about massive transformations in the way people go about their daily activities world over. The educational sector is constantly experiencing significant transformation due to advancements in Information and Communication Technologies- ICTs (Fagbola et al. 2024). ICTs play an important role in the life of the people and offer real-time opportunities for improving access, transfer of information and knowledge from institutions of higher learning to a wide range of users, thereby promoting unhindered access to knowledge and knowledge-sharing practices (Abbas & Sharma, 2020).

Also, the Internet has become an essential tool in the global educational system providing access to diverse educational resources irrespective of location. Open education has come a long way over the last two decades in reshaping the effectiveness and economics of education (Butcher & Moore, 2017). The development of Open Educational Resources (OER) in higher education in the 21st Century constitutes a part of the larger social movement toward opening the education landscape that was opened only to a limited number of people who paid for access to use information and services (Tella, 2020).

Thus, in recent times, OERs have gained significant reach globally as a means of facilitating free and open access to educational materials, mainly due to increasing possibilities of digitisation, greater access to the Internet and new flexible intellectual property licenses. OER, are digitised materials that are offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research. OER includes learning content, software tools to develop, use and distribute content, and implementation of resources such as open licenses (Huang et al., 2020)

OER is a major revolutionary movement in the field of education, providing much scope for digital learning by providing access to ample learning materials worldwide (Dsouza, 2021). OER are public domain resources or those with intellectual property licenses that permit their free use and re-purposing (Mirror, 2022). Equally, Open Educational Resources are teaching, learning and research content that is 'libre' (Openly licensed content) and at the same time 'grantis' (free of charge) such as textbooks, courses, source materials, interactive simulations, audiobooks, modules, open access books, videos, podcasts, learning objects, among others (Christoforidu & Georgiadou, 2022). OER runs the gamut and stretches beyond digital textbooks- usually perceived as the most common

educational resources including course materials, university courses, e-learning platforms, software, and streaming videos to lectures and digital repositories of monographs and journals (Roncevic, 2022). Therefore, OERs are freely available and can be used, revised, and distributed by anyone.

Also, Zaid and Alabi, (2020) reported that OER enables students to learn at their own pace, convenience, helps them prepare for classes, and mainly serves as supplementary materials to their course modules. OER contents include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge (Hillman et al., 2021). The purpose of OERs is to remove unnecessary barriers to access knowledge and equalize access to education by making high quality educational materials and opportunities more broadly available. With the OER, education can become accessible to everyone who wants to learn, while teachers have the opportunity to enrich their teaching practice. The usage of OER to derive the huge benefits depends on the individuals' approach. The monitoring of OER development in higher education is essential, but approaches may vary across countries (Adil et al., 2024).

Attitude is a positive or negative evaluation of an object which influences human behavior towards that object. Undisputed attitude is fundamental to the ultilisation of electronic information resources and thus, constitutes a significant factor in OER's utilisation. Attitude could be described as the degree to which an undergraduate has a favourable or unfavourable evaluation of OER. Attitude is determined by three components: attitude toward the behaviour, behavioural beliefs and outcome evaluation. (Daud et al., 2019). Developing a positive attitude for any task could serve as a motivation for acquiring new skills such as ICT skills to facilitate adoption and use of OER successfully.

ICT skills is the ability to use tools of Information and Communication Technology to define one's information problem clearly, access information efficiently, evaluate the reliability and authority ICT tools available in order to use it effectively and responsibly, communicate one's new ideas effectively and ethically with the appropriate ICT tools available (El Kadiri et al., 2016). ICT skills are essential for effective utilisation of OER because online resources can only be accessed electronically through the use of Information Technologies. Person's ability to converse with people through various modern technologies, such as sending an email, making a video call, searching the internet using a tablet or mobile phone. It includes the ability to use online information resources. Several studies (Fagbola et al., 2024; Tella, 2020) examined open educational resources but it seems there is none that focused on students of the Faculty of Education in University of Ilorin. Therefore, the study investigated attitude and ICT skills as determinants of utilisation of Open Educational Resources among undergraduates in the Faculty of Education University of Ilorin, Nigeria.

Statement of the problem
Open Educational Resources (OERs) has enormous benefits, which cannot be overemphasized. OER has potential to revolutionize education by making high quality learning materials freely available to students and educators worldwide especially in developing countries like Nigeria where access to high quality teaching resources is scarce. Also, the adopting OER is a social justice action that has the potential to address educational inequities (Noone et al., 2024). Similarly, Sabirovna (2024) reported that adoption and integration of OER can serve as a viable strategy for educational

institutions aiming to democratize access to knowledge and reduce disparities in learning opportunities

However, despite the increasing benefits, and the potential of OERs to contribute to the educational advancement of developing countries, there is low usage of OERs (Hilton, 2020; Luo et al., 2020). Low usage might be due to poor attitude and lack of ICT skills. Several studies (Zaid & Alabi, 2020; Akomolafe &Adegun, 2014) examined OERs but it seems none of the studies examined attitude and ICT skills towards utilisation of Open Educational Resources. Therefore, the study investigated attitude and ICT skills as determinants of utilisation of Open Educational Resources among undergraduates in the Faculty of Education, University of Ilorin, Nigeria.

Research Questions

The following research questions are formulated based on specific objectives to guide this study:

1. What are the types of Open Educational Resources (OERs) available to undergraduates of Faculty in Education, University of Ilorin, Nigeria?
2. What is the attitude of undergraduates towards Utilisation OERs in the Faculty of Education, University of Ilorin, Nigeria?
3. What is the level of ICTs skills possessed by undergraduates of the Faculty of Education, University of Ilorin, Nigeria?
4. What are the benefits of using OERs by undergraduates of the Faculty of Education, University in Ilorin, Nigeria?
5. What are the challenges associated with the utilisation of OERs among undergraduates in the Faculty of Education, University of Ilorin, Nigeria?

Literature review

Psychologists define attitudes as a learned tendency to view and judge things in a certain way. This can include an evaluation of people, issues, objects, policies, or events. It is an umbrella term that consists of our opinions, emotions, perceptions, beliefs, expectations, values, and intentions. The ability to use tools of Information and Communication Technology (ICT) to define one's information problem clearly, access information efficiently, evaluate the reliability, and authority is germane. ICT tools available in order to use it effectively and responsibly communicate one's new ideas effectively and ethically with the appropriate ICT tools available (Jeyshankar, 2020).
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Ismail et al. (2019) conducted a study on awareness of Open Education Resources (OER) in higher learning institutions. The study adopted survey research design. The result of the study revealed that the majority of respondents identified Wikipedia as a highly used platform. Moreover, the respondents acknowledged using other forms of OERs platform and widely dispersed as follows; YouTube, online tutorial and MOOC while MIT and Khan Academy were least identified platforms. Similarly, Humphrey and Kolawole (2021) conducted research on awareness and use of open educational resources by Library and Information Science Students of Ignatius Ajuru University of Education, Rivers State, Nigeria. The findings of the study revealed the types of OER used by library and information science undergraduates. The study listed lecture notes, e-textbooks, e-journals/databases, Project reports, courseware from other universities, conference papers, and youtube videos. This data shows that the respondents have a high level of utilization of the various types of OER.

Karitu and Kimani (2022) conducted a study on assessment of utilization of Open Education Resources by postgraduate students in selected public university libraries in Kenya. The outcome of the study revealed that the OER materials are underutilised with only nearly half of the students utilising lecture notes. The findings concur with the study by Christoforidou and Georgiadou (2021) which found that the most preferred OER resource is tutorial materials. Similarly, Jurado and Pettersson (2020) investigated lecturers' attitudes and utilisation of open educational resources in higher education in Cuba, Guatemala, Peru and Brazil. The result indicated that lecturers have a positive attitude towards OER in all groups, with the group in Guatemala more reluctant than the others to share their material. Also, lecturers utilized OER for sharing their contents and were prepared to make material of their own available to others. It was observed that some lecturers are more willing to share their work than others, indicating the need to understand lecturers' psychological and behavioural determinants that influence knowledge sharing on OER.

Gamit (2021) conducted a study on awareness and attitude towards open educational resources in higher education students. The findings of the study revealed that there is a significant relationship between awareness and attitudes of higher education students in open educational resources. Issa et al., (2020) conducted a study on undergraduates' attitude towards the utilisation of open educational resources for learning. The findings of the study revealed that undergraduates have a positive attitude towards the utilisation of OER. Also, Mubofu and Kainkwa (2023) conducted research on university lecturers' feelings, awareness and attitudes towards open educational resources: experience from two higher learning institutions in Tanzania. The results of the study suggest that the participants did perceive the advantages of OER as well as their impacts, which suggest that libraries and other stakeholders should work together to educate the public about OER-related concerns.

Johnson et al. (2021) conducted a study on the digital divide: exploring the relationship between ICT skills and electronic resource access among students in underserved communities. The findings of the study showed that students with lower ICT proficiency faced greater barriers in accessing and utilising electronic resources. Similarly, Kim and Park (2020) investigated how students' ICT skills influenced their online information seeking behaviour. The study revealed that students with advanced ICT skills displayed more efficient and effective information-seeking patterns, leading to enhanced utilisation of electronic resources and improved academic performance. Umar et al. (2023) conducted a study on ICT skills as determinant of use of electronic information resources among postgraduate students of University of Abuja, Nigeria. The research design adopted for the research is the survey research design. The result indicates a high level of ICT skills among postgraduate students in University of Abuja.

According to Huang et al. (2020) the essence of OERs is problem solving, this is because creative and innovative information access tools provide a process used to reach positive outcomes. They stated also that creative and innovative information access tools creates original ideas, it leads to aesthetic product, make students more intelligence, it improve their imagination, it help in self-expression, help in problem solving, it brings enjoyment, it allow divergent thinking, it improve students inventiveness, it help in students creative writing, and other aspects. Also, OEDs free access addresses barriers like the digital divide and ensures content quality and sustainability, enabling equitable access to educational resources (Mncube, 2024).

Moreover, Ahmed et al. (2022) stated that OER is a confluence of personality traits; it is a way of thinking and knowing, and social and environmental influence. It is a universal ability that does not decline with age but changes qualitatively with cognitive development and the

accumulation of life experience and expert knowledge. Creativity is a process of justifying difficulties, solving problems, identifying gaps in information, finding missing elements, making guesses and formulating hypotheses about these deficiencies; evaluating and testing these guesses and hypotheses; possibly revising and retesting them; and finally communicating the results.

According to Kumar and Vasimalairaja (2019) barriers to OER is a conflicting subject because it is complex and varied. Mtebe and Raisamo (2019) reported lack of access to computers and the Internet, low Internet bandwidth, absence of policies, and lack of skills to create and/or use OER are the main barriers to the use of open educational resources in HEIs in Tanzania. According to Mubofu and Kainkwa (2023) lack of funding, lack of skills and insufficient knowledge are factors influencing student's use of creative and innovative information access tools. Other factors are lack of imagination, cost effective nature of acquiring emerging ideas, poor parental bring up, shortage of training etc. Kumar and Vasimalairaja (2019) conducted a study on educators' acceptance of OER using the methods of interviews, questionnaires and observations of teachers and content developers from Bangladesh, Sri Lanka and users from UNESCO (2019) Open Training Platform. The findings showed a lack of infrastructure for proper implementation of OER in developing countries. While Hilton (2020) conducted a study on Open educational resources and college textbook choices: a review of research on efficacy and perceptions. The researcher summarised factors that affected the acceptance of OER in Africa as culture issues and pedagogical localisation, incentives for faculty members, user behaviours and user support systems.

Research design
The study used descriptive survey design because it allows the use of questionnaire as data collection instrument. The population for this study is the entire undergraduates in the Faculty of Education with the population of 10,609 with nine (9) departments.

The population is 10,609 and sample size of 385 was derived using Morgan sample size table at precision of ±5% (Krejcie & Morgan, 1970). The statistical analysis used for the study is frequency count, percentages, mean and standard deviation.

Results and Discussion of the findings

Response rate
Out of 385 copies of questionnaire distributed, 236 copies were filled completely and returned. Thus the response rate of 61.3%

Types of OERs available to undergraduates
The study sought to know types of OERs available to undergraduates. They were requested to score types of OERs available to undergraduates on a two-point frequency scale: available and Not available, respectively. Table 1 presents the percentage, mean and standard deviation scores of the types of OERs available to undergraduates.

Table 1: Mean and standard deviation scores of types of OERs available to undergraduates

S/N	Types of Open Educational Resources	A	NA	Mean	SD
1.	Open Courseware	165 (69.9)	71(30.1)	1.30	0.46
2.	Online Modules	179(75.8)	57(24.2)	1.24	0.43
3.	Open Textbooks	186(78.8)	50(21.2)	1.21	0.41
4.	Streaming Videos	127(53.8)	109(46.2)	1.46	0.50

S/N		SA (%)	A (%)	Mean	SD
5.	Open Journals	130(55.1)	106(44.9)	1.44	0.48
6.	Digital Tutorials	196(83.1)	40(16.9)	1.17	0.38
7.	Digital Learning Objects	184(78.0)	52(22.0)	1.22	0.42

1.09

Source; Field Survey, 2024

Table 1 showed the types of OERs available to undergraduates: Digital Tutorials (= 1.17, SD = 0.38); Digital Learning Objects (= 1.22, SD = 0.42); Open Journals (= 1,44, SD = 0.48);Open Textbooks (= 1.21, SD= 0.41); Online Modules (= 1,24, SD = 0.43) and Open Courseware (= 1.30, SD = 0.46) among others. The findings indicate that OERs available are digital tutorials, digital learning objects, open journals, open textbooks and others.

Attitudes of undergraduates towards utilisation OERs

Table 2 Mean and standard deviation scores of the attitudes of undergraduates towards utilisation OERs

S/N	Attitudes toward the utilisation of OERs	SA (%)	A (%)	D (%)	SD (%)	Mean	SD
1.	OERs are easy to use	27(11.4)	172(72.9)	17(7.2)	20(8.5)	2.13	0.72
2.	OERs are easily accessible	18(7.6)	166(70.3)	21(8.9)	31(13.1)	2.28	0.79
3.	OERs are readily available	41(17.4)	153(64.8)	5(2.1)	37(15.7)	2.16	0.89
4.	OERs are convenient to use	33(14.8)	165(69.9)	-	27(11.4)	2.09	0.77
5.	OERs are widely acceptable	35(14.8)	165(69.9)	6(2.5)	30(12.7)	2.13	0.82

2.16

Source; Field Survey, 2024

Table 2 showed the attitudes of undergraduates towards utilisation OERs were: OERs are easy to use ($\overline{x}$= 2.13, SD = 0.72); OERs are easily accessible ($\overline{x}$ = 2.28, SD = 0.79); OERs are readily available ($\overline{x}$= 2.16, SD = 0.89) and OERs are widely acceptable ($\overline{x}$ = 2.13, SD = 0.82) amongst others. The findings of the study suggest that undergraduates developed a positive attitude towards the usage of OERs.

Level of ICTs skills possessed by undergraduates

Table3: Mean and standard deviation scores of Levels of ICTs skills possessed by undergraduates.

S/N	Level of ICTs skills possessed by undergraduates	VH	H	M	L	Mean	SD
1.	Computer Literacy	36(15.3)	118(50.0)	62(26.3)	20(8.5)	2.28	0.82
2.	Online OERs Skills	34(14.4)	131(55.5)	51(21.6)	20(8.5)	2.24	0.80
3.	Microsoft Office	31(13.1)	108(45.8)	71(30.1)	26(11.0)	2.55	0.86
4.	Multimedia Applications	40(16.9)	72(30.5)	104(44.1)	20(8.5)	2.44	0.87
5.	Email	108(45.8)	88(37.3)	30(12.7)	10(4.2)	1.75	0.84

2.25

Source; Field Survey, 2024

Table 3 showed the levels of ICTs skills possessed by undergraduates were high: Computer Literacy (= 2.28, SD = 0,82); Online OERs Skills (2.24, SD = 0.80); Microsoft Office (= 2.55, SD = 0.86) and Multimedia Applications (= 2.44, SD = 0.87) amongst others. The findings imply that undergraduates' ICT skills are high.

Benefits derived by undergraduates using OERs

Table 4: Mean and standard deviation scores of the benefits of using OERs by undergraduates

S/N	Benefits of utilisation of OERs	SA	A	D	SD	Mean	SD

S/N		SA	A	D	SD	Mean	SD
1.	OERs improve quality of education	93(39.4)	132(55.9)	-	11(4.7)	1.70	0.70
2.	OERs reduce information access gap	55(23.3)	100(42.4)	76(32.2)	5(2.1)	2.42	1.18
3.	OERs accelerate Knowledge flow	62(26.3)	160(67.8)	6(2.5)	8(3.4)	1.83	0.63
4.	OERs increase the number of people involve in educational process	51(21.6)	146(61.9)	8(3.4)	31(13.1)	2.06	0.88
5.	OERs can be used worldwide independently	79(33.5)	126(53.4)	6(2.5)	25(10.6)	1.90	0.88
6.	OERs allow more personalised learning	92(39.0)	126(53.4)	-	18(7.6)	1.79	0.80

1.95

Source; Field Survey, 2024

Table 4 showed the benefits of using OERs by undergraduates: OERs reduce information access gap (= 2.42, SD = 1.18); OERs increase the number of people involved in educational process (2.06, SD = 0.88); and OERs can be used worldwide independently (= 1.90, SD = 0.88) amongst others. The findings established that the benefits of OERs to undergraduates are enormous.

Challenges associated with utilisation of OERs

Table 5: Mean and standard deviation scores of the challenges associated with utilisation of OERs

S/N	Challenges of utilisation of OERs	SA	A	D	SD	Mean	SD
1.	OERs are still in early adoption stage	51(21.6)	150(63.6)	10(4.2)	25(10.6)	2.04	0.83
2.	OERs awareness is relatively low	32(13.6)	117(49.6)	-	87(36.9)	2.60	1.12
3.	OERs repositories need recognisability	48(20.3)	138(58.5)		50(21.2)	2.22	1.00
4.	OERs contents copyright must be made public	68(28.8)	142(60.2)		26(11.0)	1.93	0.85
5.	OERs must support local languages and cultural values	64(27.1)	111(47.0)	20(8.5)	36(15.3)	2.12	0.99
6.	Government must provide OERs implementation policy at national or institutional levels	111(47.0)	110(46.6)	-	15(6.4)	1.66	0.78

2.10

Source; Field Survey, 2024

Table 5 showed the challenges associated with utilisation of OERs: OERs awareness is relatively low ($\bar{x}$ = 2.60, SD = 1.12); OERs repositories need recognisability ($\bar{x}$ = 2.22, SD = 1.00); and OERs must support local languages and cultural values ($\bar{x}$ = 2.12, SD = 0.99) amongst others. The findings of the study indicate that there are many challenges associated with utilisation of OERs such as low awareness, low recognition of OERs repositories and inadequate local languages and cultural values.

Discussion of findings
The findings of the study revealed that the most available resources were Digital Tutorials and Open Textbooks while the least available were Streaming Videos and Open Journals. The availability of various OERs aligns with findings in the literature, which suggest that digital learning objects and open textbooks are increasingly common in higher education due to their accessibility and cost-effectiveness. The findings corroborate the outcome of the study carried out by Wiley et al. (2014) who reiterated the growing adoption of OERs in educational institutions, highlighting their potential to enhance teaching and learning by providing high-quality, freely accessible learning materials.
The findings of the study revealed that undergraduates generally had a positive attitude towards the utilization of OERs. The findings aligned with Hilton (2020) who reported that the majority of faculty and students who have used OER had a positive experience and would do so again. Students developed positive attitudes towards OERs by appreciating the flexibility and accessibility of OERs, which allow them to access materials anytime and anywhere. Similarly, the findings agreed with Hilton (2020), who reported that students generally perceive OERs as beneficial to their learning experience due to their ease of use and accessibility.

Also, the findings of the study revealed that undergraduates possess moderate to high levels of ICT skills, particularly in areas such as Microsoft Office, Computer Literacy and Online OERs Skills. However, skills in Multimedia Applications were rated lower. The possession of ICT skills is critical for the effective use of OERs. The findings of the study are not at variance with the outcome of study carried out by Redecker (2017) who asserted that digital literacy, including proficiency in using various ICT tools, is essential for students to fully benefit from digital resources. Also, the present findings affirmed the result of the study by Bright (2021) who emphasized the importance of ICT skills in enabling students to navigate and utilize electronic information resources effectively. The findings of the study revealed the primary benefits of using OERs by the respondents included improving the quality of education, reducing the information access gap and accelerating knowledge flow. Additionally, OERs were seen as increasing participation in the educational process. The present findings supported the findings by Shatri et al. (2021) who reported that benefits of OERs are well-documented; significantly enhance the quality of education by providing up-to-date and diverse learning materials. They also help bridge the information access gap, particularly in resource-constrained environments, as noted by Li and Wong (2021). Furthermore, OERs can facilitate faster dissemination of knowledge and increase educational participation by making learning materials widely accessible (Huang et al., 2023). Al-Abri and Dabbagh (2018) reported that that the OER movement has not expanded fully into educational sectors, and the level of faculty. The finding infers that there are challenges militating against adoption and use of OERs.

The findings of the study revealed that OERs has enormous challenges such as low awareness, OERs repositories lack recognition, and failure to support local languages and cultural values. The findings of the study agreed with the outcome of findings by Tlili et al. (2021) that reported the issue of low awareness and recognisability of OERs, which can hinder their adoption. The challenges in OER adoption are common across different contexts. Moreover, Bradshaw (2022) emphasized the importance of contextualizing OERs to fit local languages and cultural contexts to ensure their relevance and effectiveness in different educational settings.

Conclusion

The study concluded that there is a significant availability and positive attitude towards the utilisation of OERs by undergraduates at the University of Ilorin but several challenges hindered their optimal use. These challenges include low awareness and the need for better recognition and cultural adaptability of OERs. The following are the recommendations emanated from the findings.

Recommendations

Based on the findings, the following recommendations are made:

1. There should be concerted efforts to improve positive attitudes of undergraduates towards the use of OERs in Faculty of Education.

2. Educational institutions should improve the recognition and accessibility of OER repositories among undergraduates.

3. Universities should provide more training and resources to assist undergraduates to improve their ICT skills, particularly in areas where they are lacking.

4. Government and educational institutions should develop and implement policies to support the adoption and integration of OERs into the educational system.

References

Abbas, S.M. & Sharma, S.K. (2022). Role of Internet in knowledge management. *Palarch's Journal of Archeology of Egypt/Egyptology,* 17(6), 1-9. https://www.archives.palarchonl/index.php/jae/article/download/679416553.

Adil, H. M., Ali, S., Sultan, M., Ashiq, M., & Rafiq, M. (2024). Open education resources' benefits and challenges in the academic world: a systematic review. *Global Knowledge, Memory and Communication*, *73*(3), 274-291.

Al-Abri, M. A., & Dabbagh, N. (2018). Open educational resources: A literature review. *Journal of Mason Graduate Research,* 6(1), 83-104.

Akomolafe C. O. & Olajire A. A. (2014) Utilization of open educational resources (oer) and quality assurance in universities in Nigeria. *European Scientific Journal 10 (7)* 535-543. https://doi.org/10.19044/esj.2014.v10n7p%25p.

Bradshaw, E. D. (2022). *Localization of Open Educational Resources by Facilitators of a Human Rights Course in Ghana* (Master's thesis, Brigham Young University).

Bright, A. (2021). *Information and communication technology skills, Internet use and copyright infringement of electronic information resources by undergraduates of two universities in South west-Nigeria* (doctoral dissertation, department of library archival and information studies, Faculty of Education, University of Ibadan, Ibadan).

Butcher, N. & Moore, A. (2017). Using open educational resources in higher education; A quick guide. httpps://services.nwu.acza

Butcher, N. (2011). A basic guide to open educational resources. paris: UNESCO & vancouver: commonwealth of learning. Available online http://unesdoc.unesco.org/images/0021/002158/215804e.pdf.

Christoforidou, A. & Georgiadou, E. (2021). Awareness and use of OER by higher education students and educators within the graphic arts discipline in Greece. *Education. Sciences.* 12(16). https://doi.org/10.3390/edusci1210016

Daud, M. Y., Abd Rahman, M. J., & Mohamad, R. (2019). Relationships between the usage of ICT, attitudes, behavior and interest towards achievement in chemistry among form four students. *Creative Education*, *10*(12), 2574.

El Kadiri, S., Grabot, B., Thoben, K. D., Hribernik, K., Emmanouilidis, C., Von Cieminski, G., & Kiritsis, D. (2016). Current trends on ICT technologies for enterprise information systems. *Computers in Industry*, *79*, 14-33.

Fagbola, O.O., Bashiru, M.O., Ajani, A.Y. & Bankole, O.A. (2024). Open educational resources awareness and use among library and information science undergraduates in Kwara State, Nigeria. *Journal of Library, Science Education and Learning Technology (JOLSELT),* 4(2), 81-102.

Gamit, R. M. (2021). Awareness and attitude of open access resources among the Faculty Members of Gujarat University: A case study. *Journal of Research in Humanities & Soc. Sciences,* 9(12), 13-19.

Hilton, J. (2020). Open educational resources, student efficacy, and user perceptions: A synthesis of research published between 2015 and 2018. *Educational Technology Research and Development*, *68*(3), 853-876.

Hillman, A. R., Brooks, A. R., Barr, M., & Strycker, J. (2021). Evaluation of Open Educational Resources for an introductory exercise science course. *International Review of Research in Open and Distributed Learning*, *22*(2), 72-86.

Huang, R., Tlili, A., Chang, T. W., Zhang, X., Nascimbeni, F., & Burgos, D. (2020). Disrupted classes, undisrupted learning during COVID-19 outbreak in China: application of open educational practices and resources. *Smart Learning Environments*, *7*, 1-15.

Huang, X., Li, H., Huang, L., & Jiang, T. (2023). Research on the development and innovation of online education based on digital knowledge sharing community. *BMC Psychology*, *11*(1), 295.

Humphrey, W., & Kolawole, F. (2021). Awareness and Use of Open education resources by Library and Information Science Students of Ignatius Ajuru University of Education. *Library Philosophy and Practice*, *5*(1), 1-19.

Ismail, M. J., Mgeni, M. S., Yunus, S. A. S., Abdulla, A. A., & Ahmada, R. I. (2019, April). Awareness of Open Education Resources (OER) in Higher Learning Institutions: Perspectives from Undergraduate Students from the State University of Zanzibar (SUZA). In *International Conference on Sustainable ICT, Education, and Learning* (pp. 225-234). Cham: Springer International Publishing.

Issa, A. I., Ibrahim, M. A., Onojah, A. O., & Onojah, A. A. (2020). Undergraduates' Attitude towards the Utilization of Open Educational Resources for Learning. *International Journal of Technology in Education and Science*, *4*(3), 227-234.

Issa, A. I., Ibrahim, M. A., Onojah, A. O., & Onojah, A. A. (2020). Utilisation of open educational resources for learning in universities in Kwara State. *The Online Journal of New Horizons in Education.* 10(3), 192-200.https://tojned.net.

Jeyshankar, R. (2020). Gender Differences of ICT Skills Among LIS Professionals in Universities of Tamil Nadu: An Analytical Study. In *Handbook of Research on Digital Content Management and Development in Modern Libraries* (pp. 243-262). IGI Global.

Johnson, J. B., Reddy, P., Chand, R., & Naiker, M. (2021). Attitudes and awareness of regional Pacific Island students towards e-learning. *International Journal of Educational Technology in Higher Education*, *18*, 1-20.

Jones, A. (2019). Digital natives: A comprehensive study of student engagement with electronic resources. *Journal of Educational Technology,* 35(3), 456- 472.

Jurado, R. G., & Pettersson, T. (2020). Students' Attitudes to Open Educational Resources (OERs). International Journal of Social Sciences and Educational Studies, 7(3), 9-18. https://doi.org/10.23918/ijsses.v7i3p9

Karitu, L. M., & Kimani, G. (2022). Assessment of Utilization of Open Education Resources by Postgraduate Students in Selected Public University Libraries in Kenya. *International Journal of Current Aspects*,6(3), 21-41.

Kim, S., & Park, H. (2020). Understanding the role of ICT skills in online information seeking behaviour: A study of university students. *Library & Information Science Research,* 42(2), 178-191.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement.* 2 (2), 1-16.

Kurelovic, E. K. (2016). Advantages and limitations of usage of open educational resources in small countries. *International Journal of Research in Education and Science (IJRES),* 2(1), 136-142.

Li, K. C., & Wong, B. T. M. (2021). A review of the use of open educational resources: the benefits, challenges and good practices in higher education. *International Journal of Innovation and Learning*, *30*(3), 279-298.

Luo, T., Hostetler, K., Freeman, C., & Stefaniak, J. (2020). The power of open: Benefits, barriers, and strategies for integration of open educational resources. *Open Learning: The Journal of Open, Distance and e-Learning*, *35*(2), 140-158.

Mirro, B. (2022, December). Adopting Open Educational Resources in a Fashion Merchandising Curriculum. In *International Textile and Apparel Association Annual Conference Proceedings* (Vol. 79, No. 1). Iowa State University Digital Press.

Mishra, S. (2017). Open educational resources: Removing barriers from within. *Distance Education,* 38(3), 369-380.

Mncube, S. (2024). Open educational resources as the panacea for the decolonisation of e-learning content in South Africa. *Distance Education*, *45*(3), 418-438.

Mtebe, J. S., & Raisamo, R. (2014). Investigating perceived barriers to the use of open educational resources in higher education in Tanzania. *International Review of Research in Open and Distributed Learning*, *15*(2), 43-66.

Mubofu, C., & Kainkwa, E. (2023). University lecturers' feelings, awareness and attitudes towards open education resources: Experience from two higher learning institutions in Tanzania. *Open Praxis*, *15*(4), 328-341.

Noone, Joanne, Robin Champieux, Asma Taha, Marilyn Gran-Moravec, Lisa Hatfield, Sharon Cronin, and Rhonda Shoemaker (2024). Implementing open educational resources: Lessons learned. *Journal of Professional Nursing* 55 (2024): 65-69.

Redecker, C. (2017). *Digital Competence of Educators*. https://doi.org/10.2760/159770

Sabirovna, Y. M. (2024). Open resources as a solution for educational content. *International Journal of Business, Law and Political Science*, *1*(6), 41-51.

Shatri, K., Buza, K., & Bunjaku, F. (2021). Teachers' perception on the benefits of using online resources. *International Journal of Emerging Technologies in Learning (Online)*, *16*(11), 289.

Smith, J., & Johnson, R. (2019). The digital divide: Exploring the relationship between ICT skills and electronic resource access among students in underserved communities. *Journal of Education and Social Justice*, 25(4), 532-547.

Tella, A. (2020). Open educational resources and distance learning: Challenges and the way forward in higher education. In Tatnall, A. (Ed.). *Encyclopedia of education and information technologies.* pp1-10. https://doi.org/10.1007/978-3-319-60013-0_260-1

Tlili, A., Zhang, J., Papamitsiou, Z., Manske, S., Huang, R., Kinshuk, & Hoppe, H. U. (2021). Towards utilising emerging technologies to address the challenges of using Open Educational Resources: a vision of the future. *Educational Technology Research and Development*, *69*, 515-532.

Umar, M. Y., et al (2023). ICT skills as determinant of use of electronic information resources among postgraduate students of university of Abuja, Nigeria. *Lafia Journal of Library and Information Science*, 4(1) 373-384.

UNESCO. (2019). Draft definition accepted during expert meeting in Paris in preparation of the OER recommendation to be considered at the 2019 General Conference of member states. United Nation Education Social Cultural Organisation, (2015). Open educational resources. Available Online http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources

Wiche, H. I., & Ogunbodede, K. F. (2021). Awareness and use of open educational resources by library and information science students of ignatius ajuru university of education, Rivers State, Nigeria. *Library Philosophy and Practice (e-journal).* 5373. https://digitalcommons.unl.edu/libphilprac/5373.

William & Flora Hewlett Foundation (2022). Open education *William and Flora Hewlett Foundation.*

Zaid, Y. A., & Alabi, A. O. (2020). Sustaining open educational resources (OER) initiatives in 17 Nigerian Universities. Open learning: *The Journal of Open, Distance and e-Learning,* pp. 1–18.https://doi.org/10.1080/02680513.2020.1713738.