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ATTITUDE OF VOCATIONAL AND TECHNICAL EDUCATION LECTURERS TOWARDS UTILIZATION OF OPEN EDUCATIONAL RESOURCES FOR EFFECTIVE TEACHING AND LEARNING IN NIGERIAN UNIVERSITIES IN NORTHEAST NIGERIA

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Abstract

The main purpose of this study was to determine the attitude of vocational and technical education lecturers towards the utilization of Open Educational Resources for effective teaching and learning in Nigerian universities in northeast Nigeria. The study adopted a survey research design and was carried out in northeast Nigeria. The population of the study was 782 Vocational and Technical Education lecturers from 5 universities that offered Vocational and Technical Education in northeast, Nigeria. The study adopted Simple random sampling to select a sample size of 254 respondents using Krejcie and Morgan (1970) sample size table. Attitude of Teachers Towards Utilization of Open Educational Resources Questionnaire, (ATTUOER-Q) was used as a data collection instrument. The questionnaire was subjected to face validation and a reliability index of 0.91 was obtained using Cronbach Alpha. The data for the study was analyzed using mean and standard deviation to answer the research questions. The findings of the study revealed that the factors that influence

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VTE lecturers' attitudes towards the utilization of OERs include technological infrastructure and readiness, educator capacity and awareness, and content quality and relevance among others; the study further revealed that to a high extent, lecturers in Nigerian universities are aware of OERs available for teaching and learning. The study recommended that Institutions should develop and implement comprehensive training programs specially tailored to the needs and conditions of vocational and technical education lecturers in Northeast Nigerian universities. And The National Council of Universities should recommend increased institutional support and resources to facilitate the integration of OER into vocational and technical education programs

Keywords: Attitude, Lecturers, Nigerian Universities, Northeast Nigeria, Open Educational Resources, Teaching and Learning, Vocational and Technical Education

INTRODUCTION

The significance of vocational and technical education in Nigeria cannot be overstated, as it serves as a cornerstone for the country's human capital development and economic prosperity. Vocational and technical education equips individuals with practical skills, competencies, and knowledge necessary for gainful employment, entrepreneurship, and national development (Okoli, 2018). In a country with a burgeoning population and diverse economic sectors, vocational and technical education plays a crucial role in addressing unemployment, poverty alleviation, and industrialization (Adeleke & Ayandiran, 2018). Furthermore, vocational and technical education programs contribute to the attainment of sustainable development goals by fostering innovation, productivity, and social inclusion (Federal Republic of Nigeria, 2013). Therefore, investing in vocational and technical education is paramount for Nigeria to harness its demographic dividend, promote socio-economic growth, and achieve global competitiveness.

Nigeria's educational sector confronts a multitude of challenges, worsening disparities and hindering the nation's overall development trajectory. Among these challenges, a prominent issue is inadequate access to quality educational materials and resources (Nwabuisi, 2019). This deficiency has a profound impact on the effectiveness of teaching and learning experiences across all levels of education, but it is particularly acute within vocational and technical education programs. Unlike theoretical subjects, vocational and technical education relies heavily on practical resources and hands-on training to impart

essential skills and competencies to students. However, the scarcity of such resources impedes the comprehensive development of learners in these fields. Without access to up-to-date equipment, tools, and materials, students are unable to gain the practical experience necessary to excel in their chosen vocations. This lack of practical exposure not only compromises the quality of education but also diminishes the employability of graduates in sectors where hands-on expertise is paramount. Consequently, addressing the dearth of quality educational resources in vocational and technical education is imperative for Nigeria to cultivate a skilled workforce capable of driving innovation, productivity, and sustainable economic growth.

The potential of Open Educational Resources (OER) extends far beyond mere access to free educational materials; it represents a paradigm shift in educational practices that can significantly impact Nigeria's educational landscape. OER not only democratizes access to knowledge but also empowers educators to tailor learning resources to meet the diverse needs of learners (Ajiboye, 2020). By leveraging OER, educators can overcome resource constraints and enrich their teaching materials with up-to-date content, multimedia resources, and interactive elements, enhancing student engagement and learning outcomes (Nkereuwem, 2019). Additionally, OER promotes collaborative and participatory learning experiences, fostering a culture of knowledge sharing and co-creation among educators and learners (Ajiboye & Olakulehin, 2020). This collaborative approach not only enhances the quality of educational materials but also cultivates critical thinking, creativity, and problem-solving skills essential for the 21st-century workforce (Igwe, 2018). Furthermore, the flexibility of OER allows educators to customize learning pathways and activities to accommodate diverse learning styles, preferences, and cultural backgrounds, thereby promoting inclusive and equitable education for all (Adedeji, 2016). As Nigeria strives to improve educational access, quality, and relevance, the integration of OER into teaching and learning processes emerges as a transformative strategy with the potential to bridge educational divides, foster innovation, and drive sustainable development.

Teachers' attitudes towards Open Educational Resources (OER) in vocational and technical education contexts are pivotal determinants of their integration into teaching practices, yet they often remain understudied. While OER hold promise for enhancing access to quality educational materials and fostering innovative teaching approaches, vocational and technical education lecturers may exhibit varying levels of enthusiasm or skepticism towards their utilization (Adedeji, 2016). Factors such as awareness, training,

institutional support, and perceived benefits influence lecturers' attitudes towards OER adoption (Ajiboye, 2020). Adequate awareness and training programs can enhance lecturers' confidence and competence in utilizing OER effectively (Nkereuwem, 2019), whereas perceived challenges such as concerns about the quality, relevance, and copyright issues of OER may hinder their adoption (Nkereuwem & Igwe, 2020). Moreover, institutional support, including policies and incentives promoting OER integration, plays a crucial role in shaping lecturers' attitudes towards these resources (Ajiboye & Olakulehin, 2020). Therefore, a comprehensive understanding of lecturers' attitudes, perceptions, and challenges regarding OER adoption is essential for devising targeted strategies to facilitate their uptake and integration into vocational and technical education curricula.

Teachers' attitudes towards Open Educational Resources (OER) are influenced by a multitude of factors that shape their perceptions and behaviors regarding the integration of these resources into their teaching practices. Firstly, awareness plays a crucial role in determining lecturers' receptivity towards OER. Educators who are well-informed about the concept and potential benefits of OER are more likely to embrace its utilization (Nkereuwem, 2019). Additionally, training programs and professional development initiatives focusing on OER awareness and implementation strategies can significantly enhance lecturers' capacity to effectively integrate these resources into their teaching practices (Ajiboye & Olakulehin, 2020). Furthermore, institutional support, including policies, infrastructure, and incentives, plays a pivotal role in facilitating OER adoption among educators (Okonkwo & Ogwu, 2017). Institutions that provide robust support systems for OER implementation are more likely to foster a culture of openness and innovation among their teaching staff. However, despite these facilitating factors, some lecturers may harbor reservations or skepticism towards OER, citing concerns about quality, relevance, and intellectual property rights (Adedeji, 2016). Addressing these concerns through quality assurance mechanisms, ethical guidelines, and collaborative initiatives can help alleviate lecturers' apprehensions and promote the widespread adoption of OER in educational settings.

Various factors contribute to shaping vocational and technical education lecturers' attitudes towards Open Educational Resources (OER), reflecting a complex interplay of individual, institutional, and contextual influences. Firstly, awareness of OER and their potential benefits is pivotal in determining lecturers' receptiveness towards integrating these resources into their pedagogical practices (Igwe, 2018). Teachers who are well-informed

about OER are more likely to appreciate their value in enhancing teaching and learning experiences. Additionally, the availability of training and professional development opportunities focusing on OER can significantly impact lecturers' attitudes and competencies in utilizing these resources effectively (Nkereuwem, 2019). Teachers who receive training in OER usage are better equipped to navigate challenges related to resource selection, adaptation, and integration into curriculum delivery. Furthermore, institutional support plays a crucial role in facilitating OER adoption among lecturers, as supportive policies, infrastructure, and incentives can create an enabling environment conducive to experimentation and innovation (Okonkwo & Ogwu, 2017). Conversely, a lack of institutional support may deter lecturers from exploring OER due to perceived barriers and uncertainties regarding resource accessibility and compatibility with existing teaching practices. Moreover, lecturers' perceptions of the perceived benefits and drawbacks of OER significantly influence their attitudes towards these resources. While some educators may recognize the potential advantages of OER, such as cost savings, flexibility, and adaptability, others may express reservations or skepticism regarding issues of quality assurance, relevance to local contexts, and intellectual property rights (Adedeji, 2016). Addressing these concerns can help foster a positive disposition towards OER adoption among vocational and technical education lecturers in Nigerian universities.

Statement of the Problem

Despite the potential of OER to enhance pedagogy, there is a dearth of understanding regarding the specific attitudes and barriers hindering their adoption among lecturers in universities. This knowledge gap impedes the optimization of teaching and learning experiences in vocational and technical education, undermining efforts to improve educational quality and accessibility within Nigerian universities. Thus, investigating the factors influencing lecturers' attitudes towards OER integration becomes crucial for devising strategies to promote their effective utilization in this academic context.

Purpose of the Study

The main purpose of this study was to determine the attitude of vocational and technical education lecturers towards the utilization of Open Educational Resources for effective teaching and learning in Nigerian universities in northeast Nigeria. The specific objectives of the study were to:

1. Identify the factors influencing Vocational and Technical Education lecturers' attitudes towards the utilization of Open Educational Resources for effective teaching and learning in Nigerian universities in northeast Nigeria.
2. Investigate the extent to which vocational and technical education lecturers in Nigerian universities are aware of various Open Educational Resources available for effective teaching and learning in Nigerian universities in northeast Nigeria
3. Explore strategies to enhance the positive attitudes of vocational and technical education lecturers towards the utilization of open educational resources (OER) for effective teaching and learning in Nigerian universities.

Research Questions

The following research questions were formulated to guide the study:

1. What are the factors influencing Vocational and Technical Education lecturers' attitudes towards the utilization of Open Educational Resources for effective teaching and learning in Nigerian universities in northeast Nigeria?
2. To what extent are vocational and technical education lecturers in Nigerian universities aware of various Open Educational Resources available for effective teaching and learning in Nigerian universities in northeast Nigeria?
3. What are the strategies to enhance the positive attitudes of vocational and technical education lecturers towards utilizing open educational resources (OER) for effective teaching and learning in Nigerian universities?

METHODS

The study adopted a survey research design and was carried out in northeast Nigeria. The Zone includes the states of Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe, and is situated at latitude 6.260 East and longitude 4.920 North East of Nigeria. The population of the study was 1982 Vocational and Technical Education lecturers from 5 universities that offered Vocational and Technical Education in northeast, Nigeria. The study adopted Simple random sampling to select a sample size of 320 respondents using Krejcie and Morgan (1970) sample size table. The instrument for data collection was a structured questionnaire titled: "Attitude of Teachers Towards Utilization of Open Educational Resources Questionnaire, (ATTUOERQ)". The questionnaire responses were organized on a 5-point scale with with two different response options: Strongly Agreed/Very High

Extent = 5 points, Agreed/Highly Extent = 4 points, Undecided/Moderately Extent = 3 points, Disagreed/Low Extent = 2 points, Strongly Disagreed/Very Low Extent = 1 point. The questionnaire was subjected to face validation by three experts from the Department of Electrical Technology Education, Modibbo Adama University Yola, Adamawa State. A reliability index of 0.91 was obtained using Cronbach Alpha. The data for the study was analyzed using mean and standard deviation to answer the research questions. All items with a mean score of 3.50 or higher were judged "Agreed/High Extent" while those with a mean score of less than 3.50 were rated "Disagreed/Low Extent".

RESULTS

Research Question 1: What are the factors influencing Vocational and Technical Education lecturers' attitudes towards the utilization of Open Educational Resources for effective teaching and learning in Nigerian universities in northeast Nigeria?

Table 1: Factors Influencing Vocational and Technical Education Teachers' Attitudes Towards the Utilization of OER

				N = 320
SN	**ITEMS**	$\bar{x}_G$	***SD***	**Remark**
Cluster 1: Technological Infrastructure and Readiness:				
1.	Availability of necessary technological infrastructure.	4.29	0.63	Agreed
2.	Reliability of internet connectivity.	4.23	0.82	Agreed
3.	Accessibility to electricity.	4.09	0.79	Agreed
Cluster 2: Educator Capacity and Awareness:				
4.	Knowledge and awareness of open educational resources.	3.90	0.87	Agreed
5.	Familiarity with the benefits and potential applications of open educational resources.	4.14	0.72	Agreed
6.	Opportunities for professional development related to open educational resources.	3.76	0.62	Agreed
7.	Collaboration and knowledge-sharing among educators.	4.14	0.78	Agreed
8.	Support from educational institutions for open educational resources integration.	4.14	0.72	Agreed
Cluster 3: Content Quality and Relevance:				
9.	Relevance of available open educational resources to vocational and technical education subjects.	3.76	0.85	Agreed
10.	Quality of open educational resources content.	4.02	0.84	Agreed
11.	Adaptation of open educational resources to local cultural contexts.	4.11	0.63	Agreed
12.	Availability of open educational resources in local languages.	4.19	0.63	Agreed
Cluster 4: Legal and Intellectual Property:				
13.	Understanding of copyright issues related to open educational	4.14	0.81	Agreed

	resources.			
14.	Clarity on licensing agreements for open educational resources usage.	4.21	0.72	Agreed
15.	Awareness of intellectual property rights associated with open educational resources.	4.12	0.63	Agreed
Cluster 5: Socio-Economic Context:				
16.	Socio-economic disparities affecting access to resources.	4.00	0.86	Agreed
17.	Poverty levels impact technological access.	4.14	0.81	Agreed
18.	Geographical disparities in resource availability.	3.95	0.70	Agreed
Cluster 6: Institutional Support and Policies:				
19.	Supportive institutional policies for open educational resources integration.	4.14	0.72	Agreed
20.	Funding availability for open educational resources initiatives.	4.19	0.67	Agreed
21.	Administrative encouragement for open educational resources adoption.	4.14	0.72	Agreed
Cluster 7: Pedagogical Training:				
22.	Training opportunities focused on open educational resource usage and integration.	4.11	0.71	Agreed
23.	Building confidence and competence in utilizing open educational resources.	4.11	0.63	Agreed
Cluster 8: Supportive Community Networks:				
24.	Collaboration among lecturers, institutions, and open educational resources communities.	3.76	0.91	Agreed
25.	Knowledge-sharing platforms for open educational resources best practices.	4.02	0.84	Agreed
Cluster 9: Acceptance and Perceptions:				
26.	Perception of open educational resources effectiveness in enhancing teaching and learning	3.97	0.70	Agreed
27.	Acceptance of open educational resources as legitimate educational resources.	4.09	0.79	Agreed
Cluster 10: Student Access and Engagement:				
28.	Student access to open educational resources.	3.78	0.62	Agreed
29.	Student engagement with open educational resources materials.	4.19	0.67	Agreed
30.	Impact of open educational resources on student learning outcomes.	3.95	0.80	Agreed

Table 1 shows the factors influencing Vocational and Technical Education lecturers' attitudes towards the utilization of Open Educational Resources for effective teaching and learning in Nigerian universities in northeast Nigeria. Table 1 showed that the respondents agreed with all the 31-item statements grouped into 10 clusters as the factors influencing VTE lecturers' attitudes towards the utilization of Open Educational Resources with the highest mean value being 4.29 and the lowest mean value being 3.76. The standard deviation which ranged between 0.62 and 0.91 indicated that the dataset's values exhibit a

relatively tight clustering around the mean, with comparatively low variability among individual data points.

Research Question 2: To what extent are vocational and technical education lecturers in Nigerian universities aware of various Open Educational Resources available for effective teaching and learning in Nigerian universities in northeast Nigeria?

Table 2: Extent are Vocational and technical education lecturers in Nigerian Universities Aware of Various OERs Available

				N = 320
SN	**ITEMS**	$\bar{x}_G$	***SD***	**Remark**
1.	I am aware of the concept of Open Educational Resources (OER)	3.93	0.80	High
2.	I have utilized OER in my teaching practices	2.09	0.83	Low
3.	I am familiar with the benefits of using OER for teaching and learning	4.19	0.74	High
4.	I actively search for OER materials relevant to my teaching subjects	4.33	0.65	High
5.	I have attended workshops or training sessions on OER usage	2.14	0.73	Low
6.	My institution provides sufficient resources and support for accessing OER	4.29	0.85	High
7.	I believe OER can enhance student engagement and learning outcomes	4.24	0.70	High
8.	I regularly incorporate OER into my lesson plans	4.10	0.70	High
9.	I feel confident in my ability to evaluate the quality of OER materials	3.86	1.06	High
10.	I collaborate with colleagues to share and exchange OER resources	3.90	1.09	High
11.	OER aligns with the cultural contexts of my students	2.67	1.15	Low
12.	I am aware of the licensing agreements associated with OER usage	3.95	0.86	High
13.	OER materials are readily available in languages spoken by my students	4.00	0.89	High
14.	I encounter difficulties in finding OER relevant to my teaching needs	3.76	0.91	High
15.	I perceive OER as being of equal quality to traditional educational resources	4.02	0.67	High
16.	I believe OER can address educational resource shortages in northeast Nigeria	4.38	0.67	High
17.	I actively contribute to OER repositories or platforms	4.14	0.73	High
18.	My institution encourages and recognizes the use of OER in teaching	2.95	0.80	Low
19.	I face barriers such as unreliable internet connectivity when accessing OER	3.90	0.10	High
20.	I believe OER have the potential to improve educational equity and access in northeast Nigeria	3.76	1.09	High
	Grand Mean	3.73		High

Table 2 assesses the extent of awareness among vocational and technical education lecturers in Nigerian universities regarding various Open Educational Resources (OER) available for effective teaching and learning in northeast Nigeria. With a grand mean of 3.73, the respondents indicated that to a high extent, lecturers in Nigerian universities are aware of OERs.

Research Question 3: What are the strategies to enhance the positive attitudes of vocational and technical education lecturers towards utilizing open educational resources (OER) for effective teaching and learning in Nigerian universities?

Table 3: Strategies for Enhancing the Positive Attitudes of Vocational and Technical Education Teachers towards Utilizing OER

		N = 320		
SN	**ITEMS**	$\bar{x}_G$	***SD***	**Remark**
1.	Design and implement training programs specifically focused on OER utilization for vocational and technical education lecturers	4.17	0.72	Agreed
2.	Establish centralized repositories of high-quality OER materials tailored to vocational and technical education subjects	4.19	0.82	Agreed
3.	Offer ongoing technical support and assistance to lecturers to overcome challenges related to accessing and using OER	4.13	0.77	Agreed
4.	Encourage collaboration among vocational and technical education lecturers to share OER resources, strategies, and best practices	4.09	0.68	Agreed
5.	Provide incentives such as professional development credits, monetary rewards, or recognition for lecturers who actively engage with and integrate OER into their teaching	3.98	0.80	Agreed
6.	Embed OER utilization into vocational and technical education curriculum design processes	4.11	0.78	Agreed
7.	Educate lecturers on copyright laws, licensing agreements, and Creative-Commons usage to alleviate concerns about intellectual property rights associated with OER	3.92	0.66	Agreed
8.	Identify and support OER champions among vocational and technical education faculty who demonstrate enthusiasm and proficiency in OER utilization	4.13	0.74	Agreed
9.	Advocate for institutional policies and funding support for OER initiatives	4.05	0.86	Agreed
10.	Conduct regular assessments to measure the impact of OER integration on teaching effectiveness and student learning outcomes in vocational and technical education	4.10	0.88	Agreed
	Grand Mean	**4.11**		**Agreed**

Table 3 shows the strategies for enhancing the positive attitudes of vocational and technical education lecturers toward utilizing open educational resources (OER) for effective teaching and learning in Nigerian universities. The respondents agreed with all the strategies listed in Table 3 with mean values that range between 3.92 and 4.19 and an accompanying standard deviation of 0.66 and 0.88 respectively.

DISCUSSION

The findings of the study revealed that the factors that influence Vocational and Technical Education lecturers' attitudes towards the utilization of Open Educational Resources for effective teaching and learning in Nigerian universities in northeast Nigeria include technological infrastructure and readiness, educator capacity and awareness, content quality and relevance, legal and intellectual property, socio-economic context, institutional support and policies, pedagogical training, supportive community networks, acceptance and perceptions, and student access and engagement. The findings are in agreement with Bello (2023) and Adamu (2018)who asserted that certain factors shaped lecturers' attitudes toward the use of OERs in tertiary institutions and the factors include poor Internet services, poor institutional databases as well and poor awareness of the available databased available to the specific tertiary institution. Supporting the findings, Babate and Bege (2019) and Bello, *et al.* (2021) noted that most institutions in Nigeria are not linked to world-renounced libraries as staff and students are not given institutional emails linked to the databases and in some cases, the institutions are not listed in the list of institutions that are beneficiaries of the information in the OERs.

The study further revealed that to a high extent, lecturers in Nigerian universities are aware of OERs available for teaching and learning. This finding is in agreement with Ojo, *et al.* (2023) and Ofoegbu*, et al.* (2021) who in their separate submissions reported that lecturers in the universities are fully aware of the available data based on where they can sort out information. However, Ivwighreghweta and Gideon (2023) lamented the state of the OERs in our universities as some are not reliable as they often go offline and take a long to return functional. To further support the findings, Okonkwo (2012) noted that OERs in our universities are not enough as this exposes many of the knowledge-seeking lecturers to search for more convenient ones and as a result become familiar with such.

The findings of the study revealed that the strategies for enhancing positive attitudes of vocational and technical education lecturers towards utilizing open educational resources (OER) for effective teaching and learning in Nigerian universities include Designing and implementing training programs specifically focused on OER utilization, Establishing centralized repositories of high-quality OER materials tailored to vocational and technical education, and Encourage collaboration among vocational and technical education lecturers. The findings are in tandem with Issa, *et al.* (2020) and Onaifo (2016) who reported that if the universities in Nigeria will collaborate and operate a central library that will be managed by the National University Commission (NUC) where information will be stored and retrieved without restrictions will enhance the utilization of OERs among lecturers in the universities and the individual university OERs and not reliable due to poor maintenance from the institutions. In the same vein, Zaid and Alabi (2021) and Loveline (2022) suggested that Advocating for institutional policies and funding support for OER initiatives are imperatives for the effective utilization of OERs in teaching and learning.

CONCLUSION

In conclusion, the results point to a high degree of awareness and acceptance of the advantages of open educational resources (OER), which suggests a promising basis for incorporating these materials into instructional strategies. On the other hand, obstacles like poor participation in training sessions, restricted use of open educational resources in the classroom, and infrastructure problems like unstable internet connectivity draw attention to areas that need to be improved. Notwithstanding these difficulties, the study emphasizes how open educational resources (OER) can boost instructional efficiency and raise student achievement in VTE fields. To create a more favorable environment for effective teaching and learning in Nigerian universities, especially in the northeast, focused efforts are advised to support increased OER utilization, improve lecturer training initiatives, and address infrastructure constraints.

Recommendations

Based on the findings of the study, the following findings emerged:

1. Institutions should develop and implement comprehensive training programs specially tailored to the needs and conditions of vocational and technical education lecturers in Northeast Nigerian universities.

2. The National Council of Universities should recommend increased institutional support and resources to facilitate the integration of OER into vocational and technical education programs.
3. Nigerian universities in Northeast Nigeria should foster a culture of collaboration and knowledge sharing among VTE lecturers, within and across institutions.

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