

Knowledge, Attitude, and Open Educational Resources (OERS) Utilisation among Learners of the National Open University Of Nigeria in Southwestern Nigeria

Olatunbosun Sunday Emmanuel ODUSANYA

Department of Politics and Administration

eUniversity Africa, Lagos State, Nigeria

Email: olatunbosunodusanya@gmail.com/olatunbosunodusanya@euniversityedu.africa

Tel: +2348033932174/8082779974

ORCID ID:0009- 0008-8066-1525

Abstract: Previous studies focused largely on assessment of OERs in regular and dual mode tertiary institutions, with little emphasis on the knowledge, attitude and utilisation of OERs of NOUN learners. This study, therefore, investigated the knowledge, attitude and utilisation of OERs among NOUN learners in southwestern Nigeria. The descriptive survey design was adopted. All the centres in Ekiti, Ondo, Osun, Oyo, Ogun were enumerated, while three out of four centres in Lagos were randomly selected. Four faculties (education, science, agriculture and arts) were selected from each centre, while two departments that constantly use OERs were purposively selected in each faculty. A total of 881 learners were randomly selected from all the centres (Ekiti-140, Ondo-158, Osun-133, Oyo-137, Ogun-132, Lagos-181). The instruments used were Test on OERs Knowledge ($r=0.80$) Attitude to OERs ($r=0.81$) and Utilisation of OERs ($r=0.83$) scales. The quantitative data were analysed using descriptive statistics. Participants were female (52.0%); mostly single (68.2%) and 67.3% within the age range of 21-30 years. Their entrance qualifications were SSCE (37.8%), Diploma (27.5%), NCE (17.9%) and GCE/A level (16.8%); and their employment statuses were; unemployed (52.5%), self-employed (27.5%) and civil servants (20.0%). The knowledge of ($\bar{x}=3.0$), and attitude towards ($\bar{x}=2.85$) the OERs were high against 2.30 threshold. OERs utilisation was ($\bar{x}=2.30$): digital course materials ($\bar{x}=2.89$), course modules ($\bar{x}=2.80$), e-resources journals ($\bar{x}=2.67$), OERs-textbooks ($\bar{x}=2.65$), tests/assessments ($\bar{x}=2.65$), assignments and quizzes ($\bar{x}=2.52$), animation ($\bar{x}=2.31$), e-library ($\bar{x}=2.23$) and online streaming videos ($\bar{x}=2.07$) against 2.30 threshold.. NOUN should actively raise awareness and educate students about OERs, emphasizing the benefits of utilizing them.

Keywords: National Open University of Nigeria, Open Educational Resources; Technology-enhanced learning

1.1 Introduction

The notion of OERs was initially introduced in 2002 during the UNESCO Forum on Open Courseware for Higher Education. This event underscored the importance of promoting the unrestricted sharing of knowledge and ensuring access to digital resources for learning and research purposes (Poposki, 2010; Butcher, 2011). OERs refers to educational materials that are perhaps accessible without charge in the general public's sphere or distributed within the terms of an intellectual property license, enabling unrestricted use or modification by others (Bissell, 2009). These resources, which have been converted into digital format and made accessible without cost, are openly shared with educators, students, and individuals pursuing self-directed learning. They are intended for use and reuse in the realms of teaching, learning, and research. OERs are online educational materials of exceptional quality that possess open licenses, presenting a remarkable opportunity for learners worldwide to collectively share, utilise, and adapt knowledge. These resources possess immense potential to stimulate instructional innovation as communities of educators and learners collaborate and share exemplary approaches (Hewlett Foundation, 2016). In addition to being cost-free, OERs can be categorised as materials that are either made available in the general public's sphere or distributed under Creative Commons licenses, granting creators the ability to maintain their copyright and dictate the conditions for the utilisation, sharing, and modification of their work by others (Creative Commons, 2016). Unlike textbooks, OERs can be regularly updated, customised, or modified by instructors to suit their specific needs.

The components of OERs can be classified into three main categories. The initial element encompasses educational content, which encompasses a diverse array of materials such as complete courses, educational materials, modules, learning objectives, collections, and academic journals. The second element comprises tools that aid in the creation, utilisation, reuse, and the dissemination of educational materials. These tools encompass a variety of software and technologies. The third element encompasses implementation resources, incorporating intellectual property licenses that facilitate the open dissemination of materials and design principles that promote effective practices, and strategies for adapting content to specific contexts. These components have garnered increasing attention from users, particularly in distance education settings like the NOUN, where the benefits of open content in addressing challenges related to providing freely accessible educational resources have been recognized (Yuan, et al 2012). Open Educational

Resources offer educational organisations a means to tackle issues associated with the provision of free-to-use educational materials. For example, a course can be placed online, where many NOUN, learners can access the material (Caswell, et al 2008).

On August 21, 2017, the National University Commission (NUC) launched the Nigerian University System OERs (NUSOERs). This initiative aimed to establish a centralized repository for OERs from all universities in Nigeria. As part of this launch, the NUC also directed that Nigerian universities be ranked based on the strength of their OERs initiatives. Before this development, no West African country had a significant presence on the World OERs Map. In the context of OERs in Nigerian higher institutions, National Open University of Nigeria (NOUN) stands out as a leading institution. The NOUN is committed to bringing education to the doorstep of the Nigerian populace, regardless of their social status or the country's developing economy. To enhance students' learning experience, NOUN has implemented the iLearn portal technology, which enables easy access to educational resources and supports online learning. This initiative aligns with NOUN's mission to promote open education and widen access to quality learning materials.

The NOUN iLearn platform has been developed to offer convenient access to education of exceptional quality. This platform presents a range of features and benefits to students, including the facilitation of online class discussions led by NOUN instructors, thereby establishing a virtual classroom environment. It serves as a space where students can seek answers to questions and gain clarification on challenging subjects. Networking and collaboration tools are also available to promote interaction and foster a sense of community among students, facilitators, academic staff, and faculty members. Additionally, the platform offers enhanced study resources like Smart e-Books, digitised lecture videos, and audio materials, which contribute to an enriched learning experience. Also, it grants access to assignments, quizzes, and self-assessment tools, aiding students in their learning journey and allowing for progress monitoring. Alongside its physical resources, NOUN extends educational support through an e-library located at its headquarters in Victoria Island, Lagos, Nigeria. This e-library serves as a valuable resource hub for all NOUN students, granting them access upon presentation of a valid student identity card. Within the e-library, students can avail themselves of a variety of resources and tools that enhance their learning experience. The e-library offers convenient internet facilities, enabling students to conduct online research, access digital materials, and engage with educational platforms. Further, the e-library hosts a vast array of resources, including books, journals, projects, theses from previous students, and various educational materials. This wealth of resources serves to enrich students' knowledge and supplement their coursework, providing them with comprehensive learning materials to aid their academic pursuits.

Moreover, the integration of OERs within NOUN brings forth numerous advantages, particularly in the Nigerian context. OERs materials play a pivotal role in dismantling barriers that hinder students from accessing diverse course materials prepared and reviewed by esteemed experts. By embracing OERs, NOUN ensures that students have equal and fair access to a diverse selection of educational resources, regardless of their location, financial constraints, or other limitations. The value of OERs was also emphasised in the Commonwealth of Learning Global Report (2017) as capable of ensuring the longevity of access to resources, diversification of the curriculum, improving digital skills, engaging students in co-creation, promoting the outputs of open research, and enhancing engagement with content and collections.

The emergence of OERs prompts a profound shift in our perception of knowledge, its accessibility, and its utilisation. It challenges existing structures and notions of intellectual property, encouraging a more inclusive and collective approach to knowledge creation and dissemination. It prompts us to rethink the concept of ownership, recognizing that knowledge is a shared and communal good that can benefit society as a whole. In this new era of knowledge sharing facilitated by OERs, individuals and communities have the opportunity to engage in lifelong learning, acquiring and contributing to a vast pool of knowledge. It presents a paradigm shift that not only enhances educational practices but also offers the potential for cultural enrichment, fostering a more connected and globally aware society. In essence, OERs embodies the transformative power of technology and the human quest for knowledge. It challenges traditional boundaries, stimulates intellectual growth, and holds the promise of a more equitable and prosperous future. By embracing OERs, we embark on a journey towards a world where the unrestricted sharing of knowledge becomes the cornerstone of progress and collective prosperity (OECD, 2007).

While users of OERs include teachers, researchers, scholars, and students, Harsasi (2015) noted that among the community of users, students remain the most beneficiary of OERs. Under normal circumstances, the NOUN programme aims to expand educational access and offer chances for continuous learning throughout life to Nigerians. The distance learning approach offered by NOUN overcome the limitations of time and location and provide flexible alternatives that prioritize the needs of the learner. Distance learning students possess distinct characteristics compared to those in traditional universities, as they are typically mature adult learners, employed, have family responsibilities, exhibit higher motivation, assume responsibility for their education, have clear goals, are self-directed, employ various learning strategies, take charge of their learning process, and often experience a sense of isolation and detachment from other students (Adetimirin & Omogbhe, 2011).

NOUN students rely on quality and current information, which is not only available in print form but also in electronic format. This is because their studies necessitate the adoption of ICTs for various learning activities. To cater to the unique needs of distance learning students, a variety of resources are made available in different formats. One such resource is OERs. OERs do not only expand the range of available learning resources but also promote the development of inclusive learning communities (Butcher, 2011). NOUN students can benefit from various types of OERs, including open-access articles, videos from platforms like YouTube, website links, public domain resources, syllabi, open courseware, and open textbooks. In the realm of higher education, OERs encompass a wide array of educational and research materials. These resources include maps, learning materials, textbooks, multimedia information and any other materials specifically created for educational, instructional, and research endeavors. Crucially, these resources are freely available for access without any monetary obligations (Groom, 2013). Considering that these are the types of OERs that NOUN's students, as well as distance learning students in other Nigerian universities, can utilize, one might wonder about the potential benefits these OERs can bring to them.

Numerous studies in the literature have highlighted the advantages of OERs for students. Watson, Domizi, and Clouser (2017) emphasise that leveraging high-quality OERs can result in substantial financial advantages for both students and educational institutions, potentially alleviating the burden of financial debt. The integration of OERs in classes has been found to result in substantial cost savings on textbooks for students, as reported in a study by Hilton, Robinson, Wiley and Ackerman (2014). Similarly, Winitzky-Stephens and Pickavance (2017) note that the cost-effectiveness of OERs can particularly benefit at-risk learners in completing their studies. The OERs resources are primarily produced by government inventiveness amongst other, and they encompass a wide range of formats, including complete course materials, videos, software and various other learning materials. Additionally, Hilton (2016) discovered that students who are registered in courses where OERs is employed as the main textbook tend to outperform students in courses using traditional commercial textbooks. Furthermore, research suggests that student performance can be positively impacted by OERs based on the empirical evidence alluding to the increase in students' academic engagement, interest and satisfaction (Farrow, Pitt, de los Arcos, Peeryman, Weller and McAndrew 2015; Pitt, 2015).

Several studies have demonstrated the positive impact of integrating OERs into courses on student performance. For instance, Pawlyshyn et al., (2013) observed higher pass rates, while Feldstein, Martin, Hudson, Warren, Hilton and Wiley (2012) noted decreased rates of failure and withdrawal in courses incorporating OERs. Nevertheless, it is essential to acknowledge that most of these studies have primarily focused on traditional higher education students. Limited research exists regarding non-traditional students, particularly those engaged in open-distance learning, such as students at institutions like NOUN.

Wiche and Ogunbodede (2021) conducted a study to investigate the level of awareness and usage of OERs among students in a university in the South-south region of Nigeria. Similarly, Onaifo (2016) examined the utilisation of OERs by students in the South-west, Nigeria. Equally, Inegbedion and Opataye (2018) investigated the adaptation of OERs and the institutional support available to learners at Open and Distance Education Universities in Nigeria. Although these studies focused on learners from dual-mode institutions, there exists a noticeable research gap concerning the utilisation of OERs among students enrolled in NOUN, which operates as a single-mode university. Consequently, there is a scarcity of studies investigating the utilisation of OERs specifically among learners in a single-mode university setting in Nigeria. This highlights the significance of conducting the current study which aims to fill this research void.

In the past, availability of educational materials and resources in Open Distance Learning and OERs portal creation by NOUN was restricted to physical libraries, creating challenges for learners in obtaining the necessary educational materials. However, with the emergence of ICTs, OERs have become a viable solution. Despite the potential of OERs, learners have not fully embraced these resources to enhance their learning experience and possibly improve their academic performance. It thus became imperative to investigate the knowledge, attitude, awareness and utilisation of OERs among NOUN learners, especially previous studies on OERs were mainly conducted largely among traditional students in dual-mode institutions, with little emphasis on the knowledge, awareness, attitude and utilisation of OERs of NOUN learners. This study, therefore, investigated the knowledge, awareness, attitude and utilisation of OERs among NOUN learners in southwestern Nigeria. This, therefore, raises concern about the knowledge, awareness, attitude and utilisation of OERs among NOUN students. Yet, the quality of learning outcomes among open-distance learners in Nigeria (and NOUN in particular) is worrisome. This study, therefore, investigated knowledge, attitude, and utilisation of OERs among learners in NOUN. The primary aim of this study was to investigate the knowledge, attitude, and utilisation of OERs among learners enrolled at NOUN in the southwestern region of the country. The study aimed to achieve the following specific objectives: determine the knowledge level of NOUN learners on Open Educational Resources which they use to support their learning; examine the attitude of NOUN learners to Open Educational Resources; and determine the utilisation level of Open Educational Resources among NOUN students;

Review of the literature

Open Educational Resources (OER) in NOUN

The National Open University of Nigeria in 2014 inaugurated a technology that offers indigenous courses online to its students. This comes as the university says it has migrated to a new e-learning platform, iLEARN. NOUN is giving its students the opportunity to gain access to multiple education delivery channels, which include virtual facilitation, video lectures, audio lectures, smart books, interactive courseware and various other resources in real time through the iLearn platform. It presents, first hand, the challenges students face while studying and how innovative technologies will solve these challenges, improve learning and further reposition NOUN to provide world-class open and distance learning in Africa. (Eysi & Omokhabi,2020).

National Open University of Nigeria (NOUN) online library, that is the Information Gateway, is a library established to support teaching, learning and research activities of the university. The main library is located at the headquarters of the University in Lagos. The library provides online catalogue, circulation, reference, information literacy, current awareness services, training, workshops, and user orientation. The major aim of the e-library is to facilitate access to scholarly information resources. There are policies that guide the nature of services in the e-library. Facilities are provided to enable library achieve its objectives. The library has a building, which has been renovated to provide services to users who prefer print copies of books and periodicals. The e-library laboratory is equipped with forty-five(45) computers, and internet access. The library's collection has more than 40,000 volumes of books and 200,000 volumes of electronic resources. It has a growing periodical and audiovisual collection. The National Virtual Library provides an online service center for accessing databases in other e-libraries all over the world. Databases include: AGORA (Access to Global Online Research Agriculture) which provides a collection of 918 journals in agriculture and life sciences to institutions in 107 countries; Bibliomania which is a collection of resources in various subjects; Bioline International features 30 peer-reviewed journals from some countries of South America, Asia and Africa in Health sciences, Biodiversity, Environment, Conservation and International Development; BLDS (British Library for Development Studies at IDS-Institute of Development Studies). Europe's largest research collections on economic and social change in developing countries and Chemistry Central a collection of peer-reviewed open access research and journals in chemical sciences (NOUN 2009) cited in Otubelu (2011) The author further submitted that NOUN designs programmes that provide a quality framework for lifelong learning in Nigeria. which promote new learning methodologies and help standardize training methods. The Virtual Library of the National Open University of Nigeria, having formed a consortium with other Open University libraries in Africa, and provides access to varied resources to its many users. The Information Gateway has more than 30 databases and offers access to more than 1,000 journals and many other types of information. Thus, the libraries and information centres have a pivotal role to play in supporting and promoting e-learning in the country. The NOUN Open Courseware published on NOUN Website has not only generated much benefits for NOUN students, but has become a resource material for students in other institutions in Nigeria, who readily find access to the courseware provided they have an internet access (NOUN, 2014) in Eysi, and Omokhabi (2020) OER remains a veritable tool in providing access to quality and affordable education. As an Open Distance Learning (ODL) institution, NOUN strives to provide education for all and promote lifelong learning. NOUN's OER activities started in August 2014 with the establishment of an OER unit under the Vice-Chancellor's office. NOUN in collaboration with United Nations Educational, Scientific and Cultural Organization (UNESCO) and Commonwealth of Learning (COL) had engaged in capacity building in this area. NOUN, being an ODL institution, currently has e-courseware comprising approximately 2,000 course material items, of which 33 have been converted to OER so far. NOUN has an OER policy approved by the university's senate in June 2016. The OER courses are based on an open-source master (XML) template with embedded metadata, machine-readable code, and open-source fonts. The OER were then released on the NOUN website in three formats: ePUB, Open Document Text (ODT), and PDF with A Creative Commons-Attribution-Share Alike licence (CC BY-SA) (NOUN, 2014 in Eysi, and Omokhabi,. (2020).The NOUN-OER unit currently houses three professional staff members, the head of unit, an instructional designer and an IT specialist, and is supported by a few external experts. The main task of the unit is to encourage integration of OER in all levels of teaching and learning of NOUN, addressing the academics in the schools as well as the staff of the departments responsible for instructional design, course publishing, library support, and IT. The OER unit has operated from August 2014 through three stages: sensitization, instrumentation and dissemination (Agbu, Mulder, de Vries, Tenebe and Caine 2016 cited in Eysi, and Omokhabi, 2020) The course modules of the National Open University of Nigeria are another in addition to widely used e-books, webinars, quizzes, computer-based tests, among others.

Methodology

For this study, an ex-post-facto survey design was employed. This particular design was chosen due to its suitability, as it does not involve the manipulation of variables. The study sample consisted of students from NOUN across the six centres in Southwestern, Nigeria. The study population for this study is 16,515 across the selected eight departments in each study centre; Ekiti (2,628), Ondo (2,971), Osun (2,498), Oyo (2,566), Ogun (2,467), and Lagos (3,385), as well as the staff of OERs unit. The sample for this study contained a total of 881 NOUN students. To choose the participants, the researchers used a multi-stage sampling procedure.

During the first stage, the researchers specifically chose NOUN as the sole single-mode distance learning institution that had implemented OERs for their teaching and learning processes. In the second stage, the researchers employed a total enumeration sampling technique to include all the centres in the state, except for Lagos state where three out of the four centres were randomly

chosen while the fourth centre was used for reliability of the instrument. In the third stage, the researchers divided the NOUN students into their different faculties using the stratified sampling technique. Additionally, the primary operational faculties that had a high enrollment of students out of seven faculties existing were chosen using the purposive sampling technique: these included Faculties of Education, Science, Agricultural Science and Arts from each centre.

In the fourth stage, two departments that were present in all faculties were purposively selected for inclusion in the study. Moving on to the fifth stage, the researchers used Yaro Yemini's formula to calculate the appropriate sample size for the study.

$$\text{using the formula: } n = \frac{N}{1 + N(e)^2}$$

Where: N = Total Population

I = Constant

e = Error margin (0.05)

$$= \frac{16,515}{1 + 16515(0.05)^2}$$

$$= \frac{16,515}{42.2875}$$

$$n = 440.5$$

To make the sample size more representative, the figure above was multiplied by two which is $440.5 \times 2 = 881$.

Table 1: Distribution of sample size for each state

States	Centre	Population	Sample Size
Ekiti	NOUN Ado-Ekiti Study centre	2628	140
Lagos	NOUN Ikeja Lagos, Apapa and MaCathy study centres	3385	181
Ogun	NOUN Abeokuta Study centre	2467	132
Ondo	NOUN Akure Study centre	2971	158
Osun	NOUN Osogbo Study centre	2498	133
Oyo	NOUN Ibadan Study centre	2566	137

TOTAL		16515	881
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Instrumentation

The researchers developed a self-structured questionnaire called the “Open Educational Resources Questionnaire” (OERQ) for this study. The questionnaire consisted of three subscales and was designed to gather information on various aspects related to OERs. In addition to capturing the demographic and socio-economic profiles of the respondents, the questionnaire included the following subscales: OERs Knowledge Scale, OERs Attitude Scale and OERs Utilisation Scale,

Open Educational Resources Knowledge Scale

The researcher created an assessment tool to evaluate the knowledge of OERs among learners at the NOUN. The instrument comprised 15 items constructed as closed-ended questions using a Likert four-point rating scale. The scale included options of Strongly Agree (SA), Agree (A), Strongly Disagree (SD), and Disagree (D), with corresponding weights of 4, 3, 2, and 1, one-to-one. To ensure the validity of the instrument, four experts specializing in ODL from the Department of Adult Education and Science and Technology Education in the Faculty of Education provided their expert opinions on the suitability of the identified items for measuring knowledge. The final version of the item was created after five questions were removed in response to their comments. At the Apapa Study Center in Lagos State, an initial evaluation was conducted to ascertain the item's dependability. The questionnaire was pilot-tested among 20 NOUN students who do not form part of the study's population. The basis for the pilot-testing was to ascertain the level of internal consistency among the questionnaire items. The resulting Cronbach alpha value of 0.80 obtained from the pilot-testing of the questionnaire indicated that the instrument demonstrated reliable internal consistency.

Open Educational Resources Attitude Scale

The researcher developed a sub-scale comprising sixteen items to evaluate the attitude of NOUN students towards OERs. The items were formulated as closed-ended questions and utilised a Likert four-point rating scale. The rating scale consisted of options such as SA, A, SD, and D, with matching weights of 4, 3, 2, and 1, one-to-one. To ensure the validity of the instrument, four experts specializing in ODL from the Department of Adult Education and Science and Technology Education in the Faculty of Education were consulted. Their expertise was utilised to assess the appropriateness of the identified items in measuring attitude. Based on their feedback, four redundant questions were eliminated, resulting in the final version of the instrument. The item's dependability was evaluated by conducting a pilot study at the Mushin Study Centre in Lagos State. The questionnaire was pilot-tested among 20 NOUN students who do not form part of the study's population. The basis for the pilot-testing was to ascertain the level of internal consistency among the questionnaire items. The resulting Cronbach alpha value of 0.81 obtained from the pilot-testing of the questionnaire indicated that the instrument demonstrated reliable internal consistency.

Open Educational Resources Utilisation Scale

This section comprises seven items aimed at assessing the frequency and types of usage of OERs. Each item offers five response options: Never Used (NE), Use When Needed (UN), Use Once Daily (UOD), Use Once a Week (UOW), and Use at Least Once Every Month (UOEM). These response options were assigned weights of 5, 4, 3, 2, and 1, respectively. Additionally, Participants were requested to indicate their usage of various types of OERs by selecting either "Yes" or "No". The validity of the instrument was assessed by evaluating both face and content validity. Four experts, who were academic staff selected from the Department of Adult Education and Science and Technology Education within the Faculty of Education, specializing in Open and Distance Learning, provided their professional opinions on the appropriateness of the identified items for measuring utilisation. Based on their feedback, certain questions were merged, some were rephrased, and two questions were eliminated, resulting in the final version of the instrument. The reliability of the instrument was assessed through a pilot study. Twenty copies of the questionnaire were administered to NOUN students at the Mushin Study Centre in Lagos State, excluding participants from the main study population. The data obtained from the pilot study were examined to assess the internal consistency of reliability. The analysis yielded a Cronbach's alpha value of 0.83, indicating that the instrument exhibited reliable internal consistency.

The researcher, along with the facilitators from the NOUN personally administered the questionnaires to the participants. 881 copies were distributed to the selected centres, however, 866 copies were retrieved from the NOUN learners, while 19 copies were not properly filled and were not considered valid for investigation. The data that was gathered underwent analysis utilising basic percentages, mean calculations, and frequency counts to examine the demographic information of the respondents. For the research questions, frequency counts, mean values, and percentages were used for analysis. The mean score was used as a criterion to assess the usage

Results or Findings

Upon review of the information gathered for this study, this section presents the results and discussion of findings using both quantitative and qualitative methods.

Section A: Analysis of Respondents' Demographic Data

The main goal of this part is to provide a thorough presentation of the respondents' demographic information. The results of the participant demographic data collection are displayed in the presentation that follows.

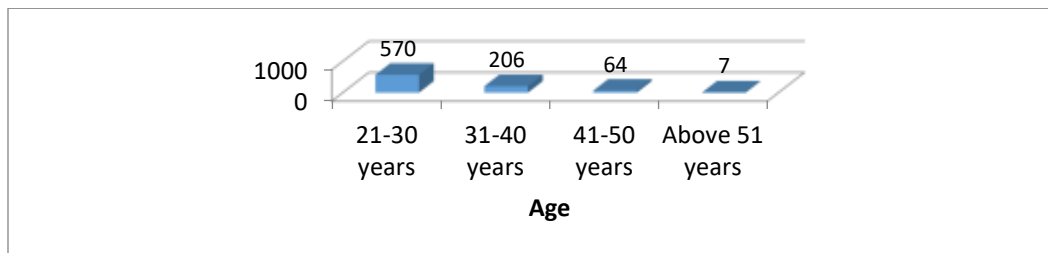


Figure 1: Bar chart on the distribution of respondents' age.

Figure.1 illustrates that 67.3% of the participants fell in the age range of 21-30 years, 24.3% were between 31-40 years, 7.6% were aged 41-50 years, and 0.8% were above 51 years old. These findings suggest that a significant proportion of the respondents are young adults in their active and prime years, suggesting that they are youthful and mature open-distance learners. This signifies a significant shift in the learner population of ODL, transitioning from an older demographic (50 years and above) to a younger cohort. Consequently, it can be inferred that the age group engaging in ODL in Nigeria consists mainly of digital natives who possess a strong affinity for ICT usage. As a result, they are likely to rely heavily on web browsing to access resources such as OERs, making it their primary source for reading materials.

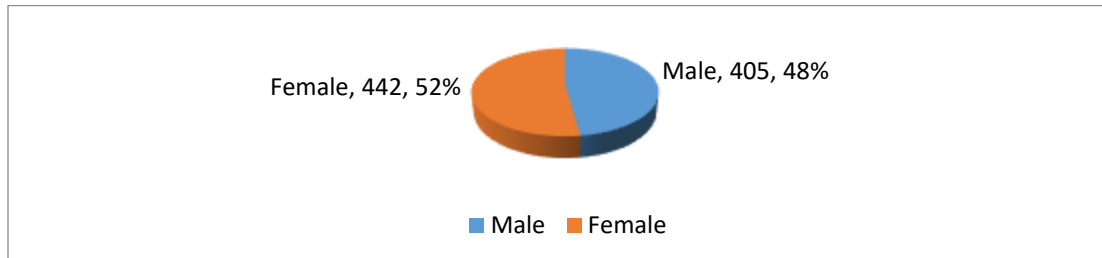


Figure .2: Pie chart on the distribution of respondents' gender

Figure .2 depicts that 47.8% of the participants were categorized as male, while 52.2% were classified as female. This indicates that the study encompasses both genders in NOUN, representing the user base of OERs.

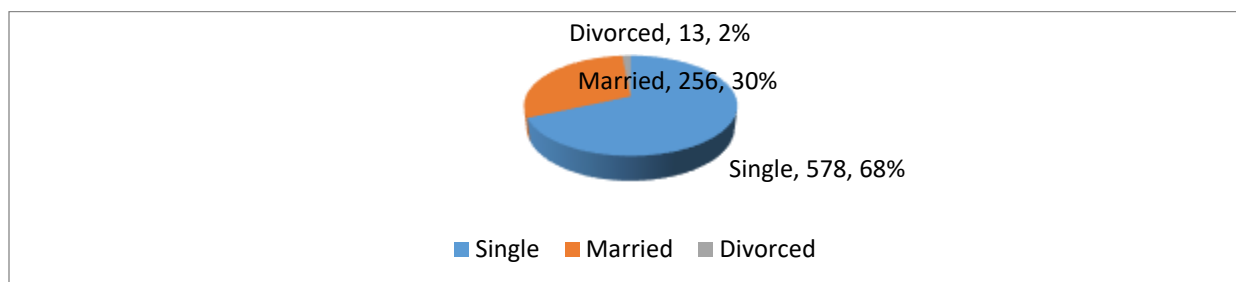


Figure 3: Pie chart on distribution of respondents' by marital status

Figure.3 demonstrates that 68.2% of the participants were single, 30.2% were married, and 1.5% were divorced. This suggests that the study considered viewpoints on Open Educational Resources from individuals belonging to various marital statuses.



Figure 4 : Bar chart showing the employment status distribution of the study's participants

Figure 4 presents that 52.5% of the respondents were classified as unemployed, 27.5% were self-employed, and 20.0% were civil servants. This indicates that the respondents from NOUN encompass individuals representing different employment statuses, including the unemployed, self-employed, and civil servants.

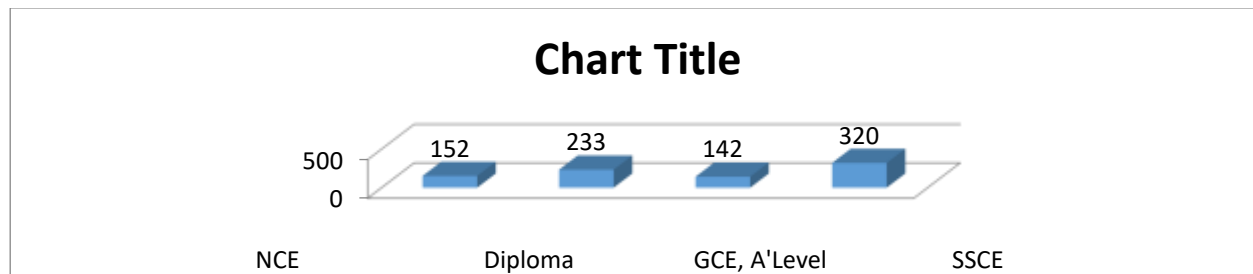


Figure 5: Bar chart on the distribution of respondents' according to their initial academic qualifications

Figure 5 shows that 17.9% of the respondent had NCE certificates, 27.5% had Diploma certificates, 16.8% had GCE /A level certificates and 37.8% had secondary school certificates. This implies the initial academic qualification of respondents before their enrollment into NOUN. All respondents are considered the users of OERs in NOUN

Research Question One

What is the NOUN Students' knowledge level of OERs which they use to support their learning?

Table 2 Respondents' knowledge of open educational resources

S/N	Items	SA	A	D	SD	$\bar{x}$	S.D
1	OERs are open courseware materials for teaching and learning.	296 34.9%	392 46.3%	89 10.5%	70 8.3%	3.08	0.88
2	OERs are all teaching resources available on the internet .	331 39.1%	390 46.0%	84 9.9%	42 5.0%	3.19	0.81
3	Open education resources are excellent sources of sharing knowledge.	303 35.8%	405 47.8%	98 11.6%	41 4.8%	3.15	0.80
4	OERs are educational materials that are freely accessible and can be utilised, reused, modified, and distributed without restrictions.	302 35.7%	392 46.3%	119 14.0%	34 4.0%	3.14	0.80
5	OERs are open-licensed materials that are free.	320 37.8%	368 43.4%	92 10.9%	67 7.9%	3.11	0.89
6	OERs refer to freely accessible online learning materials, software tools, and digital curricula that can be used, modified, and shared without any restrictions or the need to pay royalties. They provide opportunities for retaining, reusing, revising, remixing, and redistributing educational content.	333 39.3%	334 39.4%	120 14.2%	60 7.1%	3.11	0.90

7	OERs encompass a wide range of educational resources, including both digital and non-digital materials, that can be reused for various educational purposes such as teaching, learning, and research.	298 35.2%	391 46.2%	95 11.2%	63 7.4%	3.09	0.87
8	OERs refers to freely available open textbooks that have replaced expensive, traditional, and commercially published textbooks that were previously adopted.	276 32.6%	418 49.4%	103 12.2%	50 5.9%	3.09	0.82
9	OERs are inclusive of articles, textbooks, and digital materials that are readily accessible and openly available without any cost or restrictions.	294 34.7%	401 47.3%	84 9.9%	68 8.0%	3.09	0.87
10	Open education resources are learning resources for teaching and learning without paying licenses fees.	297 35.1%	374 44.2%	122 14.4%	54 6.4%	3.08	0.86
11	OERs are learning objects such as multimedia content, simulations, and website resources which are freely available and open.	296 34.7%	389 45.9%	99 11.7%	63 7.4%	3.08	0.87
12	OERs comprise a wide range of educational materials, encompassing learning modules, journals, learning objects, and collections.	257 30.3%	434 51.2%	112 13.2%	44 5.2%	3.07	0.80
13	OERs are digital resources available in videos and audio for teaching and learning.	314 37.1%	361 42.6%	92 10.9%	80 9.4%	3.07	0.92
14	OERs means a learning resource that is openly accessible and available for use by anyone without any restrictions.	249 29.4%	431 50.9%	116 13.7%	51 6.0%	3.04	0.82
15	OERs eliminates the need for seeking additional permission to utilize resources.	227 26.8%	370 43.7%	155 18.3%	95 11.2%	2.86	0.94
Weighted mean = 3.00							

In Table 2, the level of knowledge among respondents regarding open educational resources is presented. It indicates that 5.1% (n=43) of the respondents exhibited a low level of knowledge, while 94.9% (n=804) displayed a high level of knowledge. Therefore, the findings suggest a significant level of knowledge among the respondents regarding OERs in the study.

Table 2 presents the knowledge of OERs among NOUN students. It shows that 81.2% of the respondents agreed that OERs refers to open courseware materials for teaching and learning, while 18.8% of the respondents disagreed. Additionally, 85.1% of the respondents agreed that OERs encompasses all teaching resources available on the internet, whereas 14.9% disagreed. Furthermore, 83.6% of the respondents agreed that OERs is an excellent source for sharing knowledge, while 16.4% disagreed. Similarly, 82.0% of the respondents agreed that OERs comprises educational resources that can be easily utilised, reprocessed, modified, and distributed, while 18.0% disagreed. Moreover, 81.2% of the respondents agreed that OERs refers to free and open materials, while 18.8% disagreed. Lastly, 78.7% of the respondents agreed that OERs includes freely accessible online learning content, software tools, and digital curricula that can be retained, reused, revised, remixed, and redistributed without any financial obligations. Furthermore, the data revealed that 21.3% of the respondents disagreed, whereas 81.4% agreed that OERs encompasses both digital and non-digital resources that can be repurposed for educational, learning, and research purposes. Similarly, 18.6% disagreed, while 82.0% agreed that OERs are free-to-open textbooks that serve as substitutes for previously adopted expensive, traditional, and commercial textbooks. Additionally, 18.0% disagreed, while 82.0% agreed that OERs comprises articles, textbooks, and digital materials that are freely available and open. Likewise, 18.0% of the respondents disagreed, while 82.0% agreed that OERs are learning resources for teaching and learning without the need to pay license fees. Moreover, 82.0% of the respondents agreed that Open Educational Resources encompass articles, textbooks, and digital materials that are freely available and open, while 18.0% of the respondents disagreed. Furthermore, 79.2% of the respondents agreed that OERs offer flexible textbooks for learners, while 20.7% of the respondents disagreed. Similarly, 80.6% of the respondents agreed that OERs consist of learning objects such as multimedia content, simulations, and website resources that are freely available and open, whereas 19.4% of the respondents disagreed. In addition, 81.5% of the respondents agreed that OERs include educational resources encompassing learning modules, journals, learning objects, and collections, while 18.5% of the respondents disagreed. Lastly, 79.7% of the participants agreed that OERs are digitally available in videos and audio for teaching and learning, while 20.3% of the respondents disagreed. Among the respondents, 19.7% disagreed, while 70.5% agreed that OERs implies no requirement to seek additional permission to use resources. Conversely, 29.5% of the respondents disagreed with this notion.

The findings had mean scores that ranged between 3.01 to 3.19, which are above the criterion mean of 3.00. The item with the highest rating in the table is item 2 with a mean of 3.19. On the other hand, the item with the lowest rating in the table is item 16 with a mean of 3.01. This implies that the knowledge level of NOUN students on OERs which they can use to support their learning

is high. Hence, it could be deduced that the NOUN students' knowledge of OERs could be a result of their being familiar with course materials being changed from hard prints to fully open-licensed OERs. The students' high level of knowledge demonstrated in this study can be attributed to their status as online learners, where their learning, assignments, and examinations heavily rely on technology. It can also be associated with the growing prevalence of Information Communication Technology (ICT) in contemporary times. This indicates that NOUN students possess substantial awareness of the significance of OERs in the realm of learning. This finding aligns with a study by McKerlich et al. (2013), which reported that over half of their study's participants exhibited some degree of familiarity with OERs.

Given that OERs are academic resources enabled by technology, the presence of technology is essential for their effective utilisation. It is equally important for NOUN students to have access to course materials and relevant books to support their learning. Notably, in NOUN, there has been a recent shift in the nature and format of course materials, transitioning from hard prints to fully open-licensed OERs. This shows that NOUN students have existent knowledge of OERs, the types as well as its uses. This could be a result of them having clues of what OERs are through NOUN platforms. OERs were completely known to the majority of NOUN students. The single-mode institution has integrated OERs into its learning resources, underscoring its significance. Additionally, the study findings indicated that a significant proportion of the student population was familiar with OERs and actively utilised them for their learning needs. Knowledge of OERs could also be measured from its awareness. This implies that NOUN students are aware of OERs that they use to support their learning. This finding aligns with the perspective proposed by Pawlowski and Hoel (2012) that defines OERs as digital resources that can be freely accessed and utilised for educational purposes. In this study, any educational resources that participants had unrestricted access to and could freely utilize were classified as open

Research Question two

What is the attitude of NOUN students to OERs?

Table 3 : Respondents' Attitude to Open Educational Resources

S/N	Items	SA	A	D	SD	$\bar{X}$	S.D
1	Using NOUN OERs materials makes studying more comfortable for me	310 36.6%	377 44.5%	80 9.4%	80 9.4%	3.08	0.91
2	NOUN's OERs holds great significance as it enhances my level of engagement with the learning process.	320 37.8%	394 46.5%	88 10.4%	45 5.3%	3.17	0.82
3	NOUN's OERs materials are of equal quality to commercially purchased textbooks.	325 38.4%	383 45.2%	82 9.7%	57 6.7%	3.15	0.85
4	The effective utilisation of NOUN's OERs significantly improves my learning experience.	292 34.5%	389 45.9%	116 13.7%	50 5.9%	3.09	0.84
5	I enjoy learning in NOUN as OERs is being incorporated into all courses	272 32.1%	407 48.1%	131 15.5%	37 4.4%	3.08	0.80
6	NOUN's OERs assists me in comprehending topics more effectively compared to textbooks.	288 34.0%	371 43.8%	112 13.2%	76 9.0%	3.03	0.91
7	NOUN OERs has a quality which encourages me to take useful notes on the materials	281 33.2%	353 41.7%	154 18.2%	59 7.0%	3.01	0.89
8	Given the option, I would choose to learn using OERs in all of my courses.	269 31.8%	383 45.2%	122 14.4%	73 8.6%	3.00	0.90
9	Learning through the use of OERs makes me feel more self-reliant	238 28.1%	431 50.9%	118 13.9%	60 7.1%	3.00	0.84
10	I hold the belief that I can acquire more knowledge through OERs compared to traditional textbooks.	276 32.6%	363 42.9%	127 15.0%	81 9.6%	2.98	0.93
11	I like my learning experience as NOUN has included OERs in all courses offered	270 31.9%	364 43.0%	130 15.3%	83 9.8%	2.97	0.93
12	NOUN OERs is helpful, as it enables me to access course material whenever I needed it	280 33.1%	353 41.7%	117 13.8%	97 11.5%	2.96	0.96

13	Using OERs has shut out other distractions while am studying	237 28.0%	395 46.6%	123 14.5%	92 10.9%	2.92	0.92
14	OERs use is cheap compared to the use of textbooks	241 28.5%	364 43.0%	141 16.6%	101 11.9%	2.88	0.95
15	OERs provides an additional source of knowledge to me before face-to-face interactions	236 27.9%	368 43.4%	134 15.8%	109 12.9%	2.86	0.97
16	I love using OERs because they are easy to find on the NOUN platform/repository	238 28.1%	368 43.4%	129 15.2%	112 13.2%	2.86	0.97
Weighted mean = 2.85							

To assess the attitude of NOUN students towards Open Educational Resources, a normed test was conducted, as depicted in the table 3.

Table 3 presents the respondents' perspectives on open educational resources (OERs). Out of the total respondents (n=847), 8.4% (n=71) had a negative attitude towards OERs, while the majority, 91.6% (n=776), held a positive attitude towards OERs. These findings indicate a strong positive attitude towards open educational resources among NOUN learners in the study.

Table 3 presents the respondents' attitudes towards OERs. The results of the study indicate that 81.1% of the respondents agreed that using NOUN OERs materials makes studying more comfortable for them, while 18.9% disagreed. Additionally, 84.3% agreed that NOUN OERs is relevant and makes them feel more engaged with their learning, whereas 15.7% disagreed. Furthermore, 83.6% agreed that NOUN OERs is as good as purchased textbooks, while 16.4% disagreed. When considering the influence on the quality of learning, 80.4% of the respondents agreed that NOUN OERs greatly improves the value of their learning experience in their course, while 19.6% disagreed. Moreover, 80.2% agreed that they enjoy learning in NOUN as OERs is incorporated into all courses, while 19.8% disagreed. Regarding understanding topics, 77.8% agreed that NOUN OERs helps them understand topics better than textbooks, while 22.2% disagreed. Additionally, 74.9% agreed that NOUN OERs has a quality that encourages them to take useful notes on the materials, while 25.1% disagreed. When given a choice, 77.0% of the respondents agreed that they prefer learning using OERs in all their courses, while 23.0% disagreed. Furthermore, 79.0% agreed that learning through the use of OERs makes them feel more self-reliant, while 21.0% disagreed. Lastly, 75.5% agreed that they hold the belief that their learning can be more effective using OERs compared to traditional textbooks, while 24.5% disagreed. Among the respondents, 74.9% agreed that they enjoy their learning experience because NOUN has incorporated OERs in all courses, while 25.1% disagreed. Additionally, 74.8% agreed that NOUN OERs is helpful as it allows them to access course materials whenever they need them, while 25.2% disagreed.

Furthermore, 74.6% agreed that using OERs helps eliminate distractions while studying, while 25.4% disagreed. In terms of cost, 71.5% of the participants opined that the use of OERs is cheaper compared to using textbooks, while 28.5% disagreed. Moreover, 71.3% agreed that OERs provides an additional source of knowledge before face-to-face interactions, while 28.7% disagreed. Additionally, 71.5% agreed that they love using OERs because they are easy to find on the NOUN platform/repository, while 28.5% disagreed. Overall, it can be inferred that the participants in the study, who are distance learning students, have a positive attitude towards OERs. The results, with mean scores ranging from 2.86 to 3.17 and a weighted mean of 2.85, demonstrate that all the listed items have mean values higher than the criterion mean of 2.8. Therefore, the respondents' positive attitude towards OERs is evident. This data is consistent with the findings of Bliss et al. (2013) in the USA, where the majority of students perceived OERs to be of similar quality to the traditional textbooks they had previously used. This indicates that NOUN students possess a favourable outlook towards OERs, as a means of enhancing their learning experience. The finding corroborates with that of Bliss, et al. (2013) in a study conducted in the USA. It was found that the majority of students regarded OERs to be of comparable or higher quality compared to the traditional textbooks they had previously utilised.

The findings demonstrate that the attitude of distance learning students is a vital factor in the effective utilisation of OERs. This finding aligns with the research conducted by Praveen and Vasimalia (2019), who found that students in higher education institutions generally hold a moderate attitude towards OERs. Additionally, the results of this study support the conclusions made by Hilton, et al. (2013), suggesting that students generally display a positive attitude towards OERs. The attitude of NOUN students towards OERs was found to be positive, as they acknowledged the usefulness of OERs in their studies. This positive attitude can be attributed to the convenience provided by smartphones with internet access, which allows them to browse and download OERs materials at their convenience. Despite the potentially large size of these documents, NOUN students can easily access and utilize them using their smartphones, as long as they have access to various search engines. The students' favourable view of OERs is also influenced by the fact that NOUN has made these resources readily available on their platform. This availability can be attributed to the training of

NOUN staff and facilitators on OERs, as well as the peer reviews conducted before making the materials accessible on NOUN's platforms and websites for students' utilisation.

Research Question Three

What is the level of utilisation of OERs to support the learning of NOUN learners?

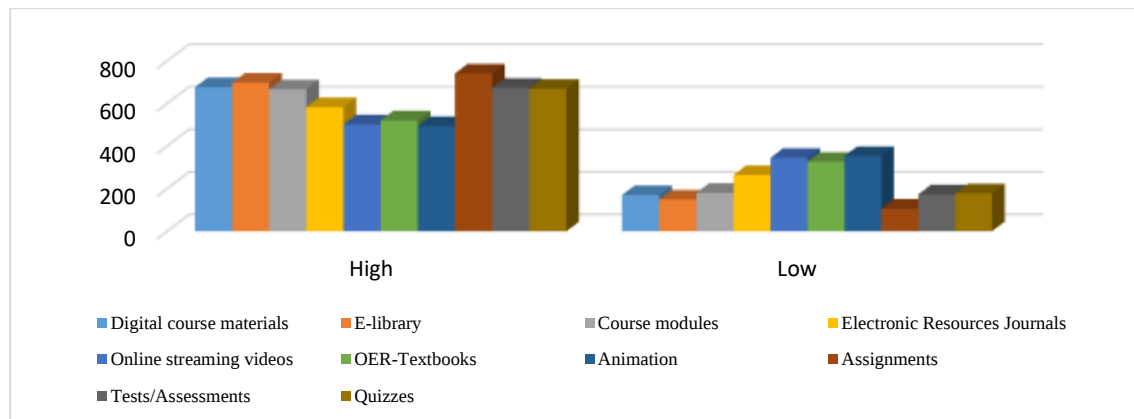


Fig 6 a: Bar chart displaying OERs utilisation

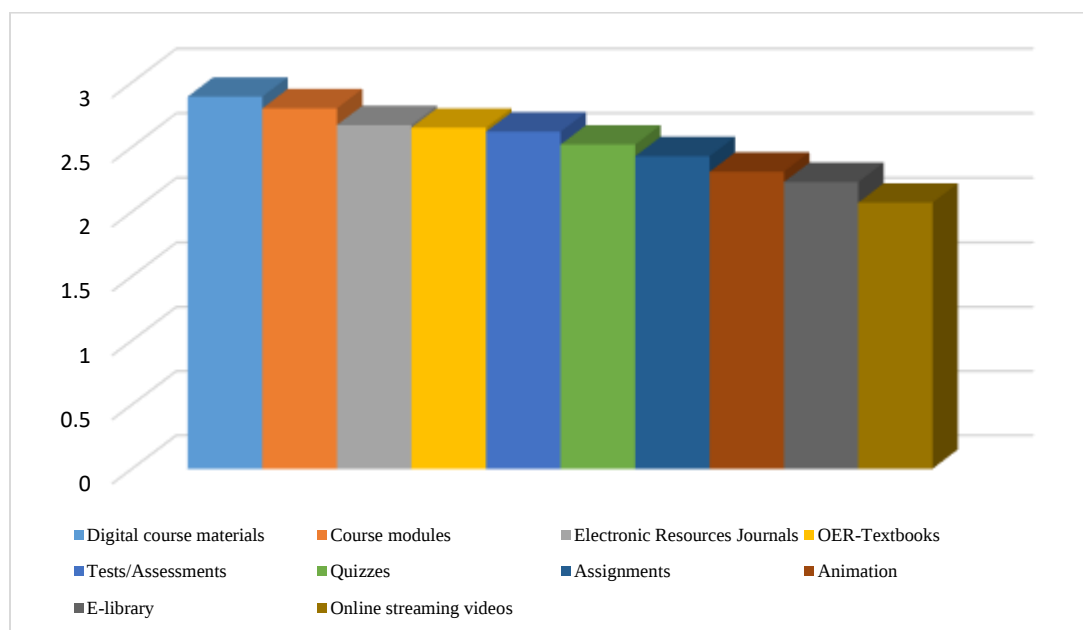


Fig 6 b: Bar chart displaying the ranking of OERs utilisation

Figures display the extent of OERs utilisation among NOUN learners. The figures 1 and b presents the mean scores of NOUN learners indicating their level of OERs utilisation for learning. Utilizing a scale of High (H) and Low (L) levels of utilisation with a benchmark of 2.30 Based on the figure, it can be observed that the majority of items scored above the benchmark, except for items 2 and 5. Item 2 examines the level of NOUN students' utilisation of the E-library, which obtained a mean score of 2.23. Item 5 explores the level of NOUN students' utilisation of online streaming videos, which obtained a mean score of 2.07. The item that assessed the level of utilisation of digital course materials by NOUN students obtained the highest mean score of 2.89, ranking it 1st in terms of utilisation. It was followed by item 2, which inquired about the utilisation of course modules, with a mean score of 2.80, ranking it 2nd. The item concerning the utilisation of electronic resources journals received a mean score of 2.67, placing it 3rd in rank. OERs textbooks obtained a mean score of 2.65, ranking them 4th, along with tests/assessments which also had the same mean

score and rank order of 5th. Quizzes received a mean score of 2.52, placing them 6th, while assignments obtained a mean score of 2.43, ranking them 7th. Animation received a mean score of 2.31, making it 8th in rank, followed by the e-library with a mean score of 2.23, ranking it 9th. Lastly, online streaming videos received a mean score of 2.07, placing them 10th in rank. The weighted mean score for the utilisation of OERs by NOUN students was calculated as 2.30. Based on the decision rule of low (1-3) and high (4-6), the grand mean score of 2.30 falls within the high range, indicating that the level of OERs utilisation for learning by NOUN students is high.

The findings show high utilisation of OERs among NOUN learners which agrees with Georgiadou and Kolaxizis's (2019) study that showed that respondents indicated that they primarily utilised OERs in their academic pursuits, particularly through e-books, films obtained from freely accessible archives, and tutorials for editing software related to images, audio, and video. The use of video and audio lectures, as well as open courseware, was comparatively less prevalent among the participants. This shows that NOUN learners are also using OERs to a great extent in their teaching and learning.

Conclusions, and Recommendations

The NOUN students expressed their knowledge of and positive attitude towards OERs, and utilization of digital resources for academic purposes. Notably, the NOUN has actively embraced the OERs movement by establishing its own OERs unit and repository. This demonstrates the institution's commitment to providing a wide range of OERs that align with global standards practised by other Open Universities worldwide. Consequently, NOUN possesses the necessary human and material resources to effectively implement distance learning in the country. To ensure the successful integration of OERs, NOUN has prioritized continuous learning and understanding of OERs principles by implementing strategies like promoting knowledge, delivering technical instruction, transforming current course materials into OERs, and cultivating partnerships with institutions and organisations. The demands of learners and educators, who stand to gain the most from NOUN's OERs efforts, are being met.

Based on the findings of the study, the following suggestions are put forward:

- 1) NOUN should actively raise awareness and educate students about OERs, emphasizing the benefits of utilizing them.
- 2) Adequate orientation sessions should be conducted to inform students about the availability of OERs within NOUN and provide guidance on accessing them effectively.
- 3) Regular promotion and advertisement of NOUN's OERs offerings should be carried out through various channels, involving staff from the OERs unit and facilitators, to keep students informed about the available resources.

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