

ASSESSMENT OF DIGITAL COMPETENCE FOR THE UTILISATION OF OPEN EDUCATIONAL RESOURCES BY ENGLISH LANGUAGE STUDENTS IN TERTIARY INSTITUTIONS IN EBONYI STATE OF NIGERIA

Maureen Chidera IGWE

Directorate of General Studies,
David Umahi Federal University of Health Sciences,
Uburu, Ebonyi State, Nigeria

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Abstract

The world is now digital, and all human activities are following the path of integrating and applying digital technologies. Digital technologies increasingly shape educational processes and access to learning resources. Therefore, this study was carried out to assess the digital competence of English Language students for the utilization of open educational resources (OER) using tertiary institutions in Ebonyi State, Nigeria. The survey research method of the correlational type was adopted with a questionnaire as an instrument for data collection, which was face-validated and pilot-tested, with a reliability index of $r=0.78$ before use. 273 respondents completed the questionnaire, and the findings revealed that students of English Language in Ebonyi State have requisite digital competence, acquired the skills through self-directed learning and trial and error practices, use OERs poorly, and a significant relationship was found between digital competence and the utilisation of OERs. Thus, the study concluded that the students have satisfactory digital competence, but this did not translate into effective utilisation of the OERs, which has implications. In view of that, the study recommends that continuous efforts should be made through seminars and workshops for maintaining and further enhancing the digital competence of the students; that capacity enhancement programmes should be conducted for English Language students of tertiary institutions in Ebonyi State on the importance, availability, and use of OER for actualization of learning objectives, academic performance, and lifelong learning. In addition, librarians in tertiary institutions are urged to provide expert support in facilitating the availability and accessibility of learning resources, and governments at state and federal levels should continuously support the development and management of digital infrastructure at various public institutions for enabling unlimited access to digital technologies and services.

Keywords

Digital Competence, Utilization of Open Educational Resources, English Language Students, Nigeria

Introduction

The existence and continuous operation of societies is basically supported with functional educational systems at the primary, secondary and tertiary levels. This is the case in Nigeria as the primary and secondary systems provide the foundations for learning and knowledge acquisition, the tertiary level drives specialised

training for requisite human resources for all sectors of the society. Thus, tertiary education system targeted at functional training and supported with requisite learning infrastructure and instructional resources enables educators, instructors and students to work collaboratively for the actualisation of expected educational learning outcomes. These are facilitated by information and

communication technologies (ICTs) covering computing systems, multimedia technologies, the Internet and associated applications that are having unlimited influence on the educational systems across the universe (Donkor, 2011).

The emergence of the Internet and other digital technologies including the web and social media platforms have facilitated the unprecedented development of information materials and learning resources across the globe. The sophisticated development of the Internet space enabled the open access movement that started in 2002 through the Budapest Open Access Initiative (BOAI) (2002), thereby providing for unlimited access to all categories and classes of online resources and applications like open books, open data, open journals, open software, open learning resources and open educational resources for free downloading and use by individuals in the society (Pappalardo, 2008; McNally, 2012). However, the only impediment to open access movement is access to the Internet, and the acknowledgement of use of such resources are expected from the users in line with scholarly best practices, especially through citations and references (Open Access Working Group, n.d.). Thus, the factual assertion is that the Internet now vomits myriads of learning materials by promoting the open access movements thereby enabling open science philosophy and open access practices, including open educational resources, especially unimaginable access to open learning resources and digital learning tools for addressing challenges of education in the 21st century (Terras, Ramsay & Boyle, 2013; Ipaye & Ipaye, 2013; Akomolafe & Olajire, 2014; Amadi & Igwe, 2015).

It is a fact that the utilisation of OER requires capacity and skills, especially digital competencies. Thus, digital competencies are inevitable as the demanding skill for proper use of OERs by students in the 21st century. Whereas the term competence covers knowledge, skills and abilities for meeting complex demands in a particular context, digital has to do with tools and technologies of the 21st century. Some related terms such as ICT skills, information technology skills, and digital literacy are used interchangeably with digital competence, to describe technology-

related skills for manipulating technological devices that are involved in information management processes. Digital competence is associated with skills for manipulation and use of digital tools and technologies especially ICT components. Digital competence refers to the confident, critical and creative use of ICTs to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society (Punie & Cabrera, 2006). Digital competence is a transversal key competence which, as such, enables acquisition of other key competences (e.g. language, mathematics, learning to learn, creativity and so on (Ferrari, 2013). It is amongst the so-called 21st century skills which should be acquired by all citizens, especially students, to ensure their active socio-economic participation in society and the economy. Digital competence is grounded in basic skills in ICT, i.e., the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet. Timmus (2014) posits that a digitally competent person has effective ICT skills, an ability to critically evaluate information, and social awareness. In other words, students that are digitally competent can use most common technologies and use digital tools and open educational resources on the Internet. Furthermore, digital competent students can critically evaluate information they found online, understand internet ethics, and consider appropriateness and reliability of online resources.

In view of the foregoing, it can be inferred that digital competences are essential in the present 21st century, especially for students in tertiary institutions. Specifically, students of English Language that are learning the theory and practice of functional communication, no doubt, need to be digitally competent in order to explore and use various open educational resources that are available online for learning and acquisition of knowledge in their area and other allied fields. Thus, it became pertinent to assess the digital competence of the English Language students for the utilization of open educational resources, using tertiary institutions in Ebonyi State, Nigeria.

Problem Statement

The continuous development of open educational resources (OER) demands that unlimited accessibility and utilisation are required by the legitimate users of such resources. This calls for the requisite skills and competencies that should be acquired and applied for the utilisation of these OER. Because the present society is in the digital era with sophisticated development of digital technologies and applications, there is an erroneous impression that students in this era are digitally competent and compliant (Okeji, Chukwuma & Nwachukwu, 2020; Olalere & Opeyemi, 2022). The case of students of the English Language requires investigation since there is hardly any literature in this direction that presented such a class of students as digitally competent for exploring and using OER (Onyedikachi, R.F. et al, 2024). So far, the studies on the utilization of OER in Nigeria have not addressed digital competence of specific class of students as likely determinants for using OER in Nigerian tertiary institutions. Based on the above context, this study was designed to assess digital competence for the use of OER among English Language Students of Tertiary Institutions in Ebonyi State. This constitutes the gap the present study seeks to fill.

Objective of the Study

The major purpose of the study is to assess the digital competence for the utilisation of OERs by undergraduate students of English Language in tertiary institutions in Ebonyi State. Specifically, the study seeks to:

- i. Assess the level of digital competence for the utilisation of OER by English Language students of tertiary institutions in Ebonyi State.
- ii. Evaluate the extent of use of OERs by English Language students in tertiary institutions in Ebonyi State.
- iii. Ascertain the avenues through which digital competences were acquired by these English Language students in tertiary institutions in Ebonyi State.

Research Questions

Specifically, the study answered the following research questions:

- i. What is the level of digital competence for the utilisation of OER by English Language students of tertiary institutions in Ebonyi State?
- ii. What is the extent of use of OERs by English Language students in tertiary institutions in Ebonyi State?
- iii. What are the avenues through which digital competences were acquired by these English Language students in tertiary institutions in Ebonyi State?

Hypothesis

The study tested one null hypotheses at 0.05 level of significance.

H₀₁ Digital competence has no significant influence on the use of open educational resources by English Language students in tertiary institutions in Ebonyi State.

Literature Review

The literature covered in this study represents digital competence for the use of open educational resources (OER) by English Language students. Iro-Idoro and Jimoh (2025) evaluated the digital competence of undergraduate students and found that the students possess requisite digital competence that is significantly related to their research capacity and other engagements. The findings from the studies of Okeji, Chukwuma and Nwachukwu (2020), as well as Olalere and Opeyemi (2022), disclosed the inevitability of the relationship between digital competence and the academic engagements of students in the digital era, and therefore advocated for continuous capacity enhancement of the digital competence of the students. The study by Millawithanachi (2012) on critical success factors (CSFs) for students' use of OER revealed that digital competency is a CSF, especially for learning. It therefore recommended developing ICT infrastructure in the university as a priority. For Gakibayo, Ikoja-Odongo and Okello-Obura (2013), the utilisation of e-resources and OER by 266 undergraduates required computer and information literacy skills, but lack of computers and slow internet connectivity in the university affect service delivery. The study recommended a compulsory course on digital competence for all students, irrespective of academic discipline.

Whereas the study by Baro, Endouware and Ubogu (2011) revealed deficiency in user training for digital competence, Egberongbe (2011) recommended user training for the acquisition of digital competence for the use of OER. To Okiki and Asiru (2011), digital competence is among the determinant factors influencing the use of OER by students. Similarly, studies by Okonkwo (2012), Ivwighreghweta and Onoriode (2012a), Ivwighreghweta and Onoriode (2012b) and Agber (2015) disclosed the importance attached to the use of OER by the academic community of tertiary institutions in Nigeria, and therefore made a case for improved digital competence for satisfactory utilisation. Unfortunately, the study by Adetimirin (2012), Ekenna and Mabawonku (2013) and Akomolafe and Olajire (2014) revealed poor digital competence among students for using OER, thereby requiring continuous development and implementation of capacity enhancement programmes for the students. Meanwhile, other studies by Omoni and Ifeanyichukwu (2015), Ola (2016), Nwokolo-Ojo, Igwe and Umar (2016), Onaifo (2016), Anikpa and Aer (2016) and Ukwuoma (2016) revealed poor digital competence as one of the barriers to effective utilisation of OER and recommended for upskilling programmes for the students.

Furthermore, Taiwo and Uwaifo (2024) examined the digital competence of undergraduate students in federal universities and discovered that the students are digitally competent, which has a significant relationship with their academic performance. The study by Jibrin, Mohammed, Umar and Maifatu (2024) revealed that postgraduate students possess relevant and satisfactory digital competence for using OER for their research and other academic engagements. On the contrary, Onyedikachi et al. (2024) studied the use of OERs by English Language students in Enugu State, Nigeria, and found low use of OERs alongside inadequate access to digital

technologies.

The various research findings reviewed show the relationship between digital competence and the use of OERs, the level of digital competence of the students, and the barriers to the functional utilisation of OERs, which included poor digital competence. However, in all the reviewed scholarly works, the influence of digital competence on the use of OER by students of English Language, specifically in tertiary institutions in Ebonyi State of Nigeria, is yet to be studied. This is the gap the present study intends to fill.

Theoretical framework

The theoretical framework looks at an explanation of theories that are relevant and related to a particular study. The two theories that are very relevant and directly related to this study are Information Utilization Theory (IUT) by Neelemeghan (1981) and Itoga (1992), as well as Technology Acceptance Model (TAM) by Davies (1989). Information utilization theory (IUT), propounded by Neelemeghan (1981) and Itoga (1992), is a theory that argues that pattern of access and use of information is not equal to all classes of users and the capacity to use equally differs among individuals in the society. This difference could be according to individual's profession, occupation, gender, age, culture, education or social status. The difference in the level of information utilization among individuals could be attributed to extent of provision, availability, accessibility based on skills and utility of the information. Thus, does the information user have access to it, and if it is accessible, is it in the language and format understandable to the user? This theory is relevant to this study because it is on the use of open educational resources (OER); and the use of OER depend on the capacity of the undergraduate students with respect to their level of digital competence.

Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use a technology. The TAM theory, propounded by Davis (1989), argues that when users are presented with a new technology, several factors influence their decision on the use of such technology, notably the perceived usefulness and the perceived ease-of-use (See Figure II for details).

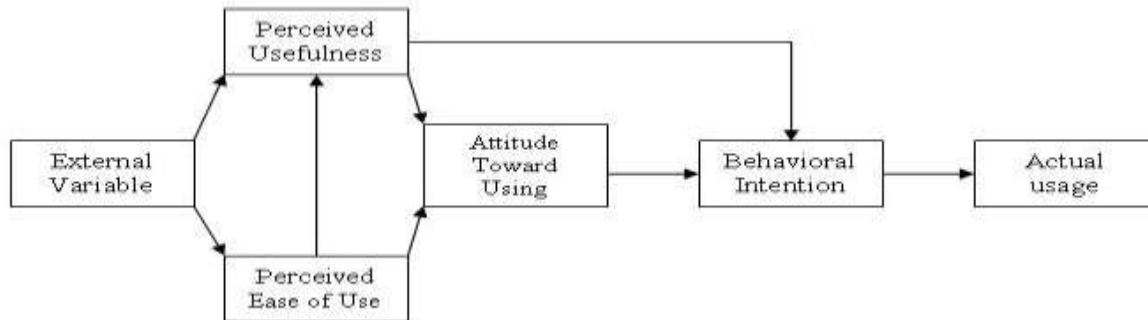


Figure I. Technology Acceptance Model (TAM)

Source: Davis (1989)

Perceived usefulness is the degree to which a person believes that using a particular technology or system would enhance his or her job performance, and perceived ease-of-use is the degree to which an individual believes that using a technology would be free from effort (Davis, 1989). This theory is relevant to use of open educational resources (OER), because OER are products of technology. In other words, OERs are new technology products, so the perceived usefulness may be for learning and acquisition of knowledge by the students, whereas perceived ease-of-use may be due to possession of digital competence for result-oriented use of OER. Thus, this theory is very relevant, as the use of OER may be influenced by the students' level of digital competence.

Methodology

The study adopted a survey research design of the correlational type, with a self-designed questionnaire as the instrument for data collection.

The questionnaire was drafted with a modified four-point Likert scale (Very Low Extent, Low Extent, High Extent, and Very High Extent) for research questions one and two on assessing digital competence level and evaluating use of OER, whereas two options of agree or disagree were used for ascertaining the avenues the respondents acquired digital competence. The questionnaire has demographic characteristics (gender, tertiary institution, and level of study), 12 items for assessment of digital competence, 12 items for evaluating extent of use of OER, and 12 items for ascertaining the avenues for the acquisition of digital competence by the students. The questionnaire was face-validated by experts in Measurement and Evaluation and Library and Information Science, and was pilot tested with a reliability index of $r=0.78$. The total population of the study from the preliminary investigation in the three institutions of study is 1,212. See Table 1

Table 1: Population of English Language Students in Tertiary Institutions in Ebonyi State

Level of Study	FUNAI	EBSU	COE, Ikwo
100 Level	32	123	248 (NCE I)
200 Level	26	No 200 level student	193 (NCE II)
300 Level	12	No 300 level student	157 (NCE III)
400 Level	21	400	No 400 Level
Total	91	523	598

Source: Preliminary investigation in the tertiary institutions in Ebonyi State, 2022.

A sample size of 300 was chosen from the total population of 1,212. This is in line with Krejcie and Morgan's (1970) formula for the determination of sample size. The stratified sampling technique was used in selecting the sample, so that each institution and level of study would get an appropriate number of representatives. The benchmark mean of 2.5 was adopted, meaning that items with a mean value of 2.5 and above were accepted, whereas those below 2.5 were rejected. The Pearson Product Moment Correlation coefficient (PPMC) was used to test the hypothesis. This is because the study is a correlational survey, interested in ascertaining the relationship between digital competence and the use of OERs by the students.

Findings

A total of 300 copies of the questionnaire were distributed, out of which 273 (91%) were

properly completed and found usable for the analysis. The 91% response rate was considered adequate because the standard acceptable for most research studies is 60% response rate (Dulle, Minish-Majanja & Cloete, 2010). The demographic characteristics of the respondents, which are gender, tertiary institution and level of study, show that the majority of the respondents are females (154 or 56.4%) whereas the rest are males (119 or 43.6%). On their tertiary institution, 118 (43.2%) are from COE, Ikwo, signifying the majority, and followed by 97 (35.5%) from EBSU. However, the least are from FUNAI with 58 or 21.3%. On the level of study of the respondents, 400 level secured the majority with 86 (31.5%), 200 level was 74 (27.1%), 100 level got 72 (26.4%), whereas 300 level had the least, which is 41 (15.0%).

Research Question 1: What is the digital competence level of English Language students in tertiary institutions in Ebonyi State?

Table 2: Digital competence level of English Language Students in Ebonyi State

	Very Low Extent (1)	Low Extent (2)	High Extent (3)	Very High Extent (4)	Mean	Remark
1	23	24	80	146	3.28	Accept
2	25	16	84	148	3.30	Accept
3	39	57	87	90	2.84	Accept
4	62	66	75	70	2.56	Accept
5	59	70	64	80	2.60	Accept
6	20	34	115	104	3.11	Accept
7	25	46	86	116	3.07	Accept
8	26	43	88	116	3.08	Accept

9	copy files/documents from hard disks to other storage devices	23	36	84	130	3.18	Accept
10	create folders on computers for storing & retrieving documents	34	42	78	119	3.03	Accept
11	use printers, scanners, compact disks and other digital devices	17	41	128	87	3.04	Accept
12	use social media tools for online communications (e.g. Face book, twitter, YouTube,)	9	22	121	121	3.30	Accept
Grand Mean						3.03	Accept

The level of digital competence of the respondents is shown in Table 2. All mean scores of the twelve items used in measuring the digital competence level of the students are above 2.5. In addition, the grand mean is 3.03, which is also above the benchmark mean of 2.5. The implication is that the respondents have a very reasonable level of digital competence.

Research Question 2: What is the extent of use of OER by English Language students of tertiary institutions in Ebonyi State?

Table 3. Extent of Use of OER by the respondents

	Extent of use of Open Educational Resources (OER)	Very Low Extent (1)	Low Extent (2)	High Extent (3)	Very High Extent (4)	Mean	Remark
1	Open access books (e-books)	101	64	69	39	2.17	Reject
2	Open access journals (e-journals)	91	74	78	30	2.17	Reject
3	Open access thesis and dissertations (e-thesis)	123	43	59	48	2.12	Reject
4	e-Course materials and e-Lecture notes	73	89	55	56	2.34	Reject
5	Online instructional videos/ teaching & learning videos	81	109	63	20	2.08	Reject
6	Open archives and digital repositories	124	75	51	23	1.90	Reject
7	Multimedia learning resources and reference materials	85	60	91	37	2.29	Reject
8	Massive Open Online Courses (MOOCs)	120	68	35	50	2.05	Reject
9	e-Quizzes and online assessment tests	105	99	54	15	1.92	Reject
10	E-Question papers and sample answers	82	75	63	53	2.32	Reject
11	Educational websites and open e-libraries	50	50	112	61	2.67	Accept
12	Social media tools e.g YouTube, Face book, Twitter	24	31	116	102	3.08	Accept

Grand Mean **2.26** **Reject**

Table 3 shows the extent of use of OER by the respondents. With the exception of item 11 and 12 which are educational websites and open e-libraries, and social media tools (YouTube, Facebook, Twitter) having mean scores of 2.67 and 3.08 respectively, it can be seen that the extent of use of OER by the students is generally poor. This was justified by the grand mean of 2.26, which is below the benchmark.

Research Question 3: What are the ways by which English Language students in Ebonyi State acquire digital competence?

Table 4: Ways the English Language Students acquired Digital Competence

I acquired Digital Competence through:		Agree	Disagree
1	Course(s) on Media Literacy and Digital Competence	99 (36%)	174 (64%)
2	Course(s) on Use of Library and Information Sources	127 (47%)	146 (53%)
3	Course(s) on Basics of Computers Systems /Information Technologies	144 (53%)	129 (47%)
4	Use of computers and laptops in ICT centres/ cybercafes in the university	185 (68%)	88 (32%)
5	Use of University Library and guidance from library staff	131 (48%)	142 (52%)
6	Internet navigation via cybercafés and personal computers	199 (73%)	74 (27%)
7	Use of social media	229 (84%)	44 (16%)
8	Assistance from friends, relatives and colleagues	176 (64%)	97 (36%)
9	Trial and error approach	180 (66%)	93 (34%)
10	Self-study with user guide	211 (77%)	62 (23%)
11	Reading books on Media, Communications, ICT and Digital Competence	142 (52%)	131 (48%)
12	Seminars and workshops on Media Literacy, ICT and Digital Competence	135 (49%)	138 (51%)

As shown in Table 4, the major avenues through which the respondents acquired media literacy and digital competence are use of social media (84%), self-study with user guide (77%), Internet navigation via cybercafés and personal computers (73%), use of computers and laptops in ICT centres/cybercafés (68%), trial and error approach (66%), as well as assistance from friends and relatives (64%). Unfortunately, course(s) on basics of computers systems/information technologies (53%), use of libraries and information sources (47%), as well as media literacy and digital competence (36%) do not make significant impact in the overall level of media literacy and digital competence of the respondents.

Test of Hypothesis

H₀₁ – Digital competence has no significant influence on the use of open educational resources by English Language students in tertiary institutions in Ebonyi State.

The outcome of hypothesis two tested using Pearson’s Correlation analysis at 0.05 level of significance is summarized in Table 5.

Table 5. Correlation analysis between digital competence and use of OERs by English language students in tertiary institutions in Ebonyi State

		Digital Competence	Use of OERs
Digital Comp.	Pearson Correlation	1	.911**
	Sig. (2-tailed)		.000
	N	273	273
Use of OERs	Pearson Correlation	.911**	1
	Sig. (2-tailed)	.000	
	N	273	273

** . Correlation is significant at the 0.05 level (2-tailed).

The correlation value of 0.911 indicates a very strong positive relationship between digital competence and the use of open educational resources by participants in Ebonyi State. Also, since the p-value 0.000 is less than 0.05 (significance level), the null hypothesis is rejected and concludes with 95% confidence that digital competence has a significant influence on the use of open educational resources by students in Ebonyi State.

Discussion of Findings

The study revealed that the English Language students have satisfactory digital competence; the students acquired the digital competence through informal and self-directed approaches; the extent of use of OERs by the students is poor, and a significant relationship was found between digital competence and the use of OERs by the students. These findings were discussed based on the research questions raised and answered as well as the hypotheses formulated and tested.

The digital competence level of the English Language students was found to be very high, as shown in Table 2. The respondents can use MS Word applications, emails for communication, search engines, social media platforms, printers, scanners, and pointing devices. This aligns with the findings of Taiwo and Uwaifo (2024), Jibrin, Mohammed, Umar and Maifatu (2024), and Iro-Idoro and Jimoh (2025) that students possessed satisfactory digital competence for using OER. Unfortunately, the findings run contrary to that of Onyedikachi et al. (2024) where English Language students were found to have inadequate access to digital technologies and Unaifo (2016) and

Ukwuoma (2016) where poor digital skills are associated with the students.

The findings from Table 3 revealed unsatisfactory use of OER among the English Language students. The findings of Gakibayo, Ikoja-Odongo and Okello-Obura (2013), Ekenna and Mabawonku (2013), Omoni and Ifeanyichukwu (2015), Onyedikachi et al. (2024) concur with the poor use of OER by the students. Fortunately, the reverse is the case with the findings of Taiwo and Uwaifo (2024) as well as Iro-Idoro and Jimoh (2025), where students are exhibiting expertise in research competence and academic performance with digital skills and use of learning resources. On the avenues through which the English Language students acquired digital competence (as shown in Table 4), it was found that use of social media, self-study with user guide, Internet navigation, use of computers and laptops in ICT centres, including trial and error approach, were the major avenues. This finding aligns with Jibrin, Mohammed, Umar and Maifatu (2024) that digital competences are acquired through diverse means.

The test of hypothesis in Table 5 revealed

that digital competence has influence on the use of OER, meaning that possession of requisite skills influences the use of OER. This is in line with the findings of Agber (2015), Ukwuoma (2016) and Iro-Idoro and Jimoh (2025) that possession of digital skills enhances accessibility and use of OER for academic activities.

Implications of the Findings

The interesting factor in this study is the revelation that students of English Language in tertiary institutions have requisite digital competences. The possession of these skills requires continuous improvement, considering that activities in this digital era requires application and utilization of digital technologies and systems. In addition, the various avenues for developing digital competence, such as self-directed learning with personal systems, user guides, trial and error methods, and the use of social media platforms, should be continuously explored by the students for enhancing digital competence. Thus, students' digital competence should make the use of OERs for academic activities relatively seamless.

Unfortunately, despite the possession of digital competence by the students, their level of utilization of OER was very low. This is a concern that requires capacity enhancement programmes on the availability and accessibility of OERs for learning and knowledge acquisition. Therefore, training students on different kinds and classes of OERs and utilization strategies remains inevitable so as to facilitate enhanced use of the resources for the benefit of humanity. This should be explored considering that the digital competence level of the students has a significant relationship with the

utilization of OERs.

Conclusion and Recommendations

The study has shown that students of English Language in Ebonyi State have requisite digital competence, acquired the skills through different self-directed learning efforts and trial-and-error practices, and a significant relationship was found between digital competence and the utilisation of OERs.

Based on the findings of the study, the following recommendations are made:

1. Continuous efforts should be made through seminars and workshops for maintaining and further enhancing the digital competence of the English Language students
2. Capacity enhancement programmes through seminars and workshops should be conducted for English Language students of tertiary institutions in Ebonyi State on the importance, availability and use of OER for actualization of learning objectives, academic performance and lifelong learning. Librarians in tertiary institutions could be of help here because they are experts in facilitating availability and accessibility of information and learning resources.
3. Governments at state and federal levels should continuously support the development of management of digital infrastructure at various public institutions for enabling unlimited access to digital technologies and services.

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