

# Extent and Relationship of ICT Literacy, Skills, and Challenges on Use of E-Resources, among Postgraduate Students, in Federal Universities in Nigeria

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## Abstract:

With the advent of new technologies it witnessed significant positive influence on teaching, learning and research activities in universities. This has offered university libraries such ample opportunities to widely provide information resources in a variety of formats. However, researches have reported underutilization of e-Resources in university despite the immense benefits to users. This research examined the extent and relationship of ICT literacy and ICT skills on use of e-Resources among postgraduate students' in Federal University Dutsin-Ma, Nigeria. The study adopted a survey research design focused on a total population of all the 2100 postgraduate students of the University. Multistage sampling technique was used in the selection process of the targeted sample. A purposive selection and proportionate sampling technique was employed to extract the sample size of 325 postgraduate students from among various programs as being the respondents for the study. A validated questionnaire was used as instrument for data collection. The Cronbach's alpha value for the constructs determined was 0.94 while the response rate reached 98%. Data were analyzed using descriptive statistics of mean and standard deviation on the extent of literacy and levels of skill on use of e-Resources; whereas Pearson Product Moment Correlation was carried out on the relationship among them. Findings revealed that there was a significant level of ICT literacy and ICT skills on the use of e-Resources as well as positive correlation between ICT literacy and ICT skills and use of e-Resources. Thus, it translated to significant influence of ICT literacy and ICT skills on the use of the e-Resources. Therefore the study concluded that utilization of e-Resources is promoted due to competent access and knowledge of information and communication technology among postgraduate students in the Federal University Dutsin-Ma, Nigeria.

**Keywords —ICT Literacy, ICT Skills, Electronic Resources, Postgraduate Students.**

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## I. INTRODUCTION

Education play crucial role in the development and advancement of a society, it helps us make the world a better place, and the more we read, the more educated we become. To produce skilled and efficient workforce for the economy,

universities are established for teaching, research and offering of services to the community. University libraries are known for providing resources to meet the information needs of those within the university community. Thus, they play supportive role to the university education by providing necessary information resources and

services, to ensure that the needs and aspirations of their users are satisfied. In the past, most university libraries provided information in print format such as print textbooks, newspapers, monographs, magazines and so on, but with the advancement in technology, most libraries have expanded their collections to include electronic resource (e-Resources). E-Resources are materials that are available and can be accessed electronically through, computer networked facilities as online library catalogues, the Internet and the World Wide Web (www), digital libraries, archives, government portals, and websites, CD-ROM databases, online academic databases, such as Mendely, Ebscohost, Elsevier ScienceDirect, Hinary, Journal Storage Project (JSTOR) and a host of others. Thus, e-Resources play a significant function in the all over world [2].

The use of e-Resources has advantages for a user in accessing information across the globe with less restriction was difficult in the past. University libraries can therefore go beyond the information resources present in the physical library to enable access to information in remote servers. In university community where students are mostly engaged in research activities, the provision of e-Resources becomes important considering that the resources contain frequently updated information [17]. The resources serve as motivating factor to students in providing the opportunity to users to transmit, acquire or download process and disseminate information on any subject of interest to aid their academic pursuit. The knowledge of Information Communication Technology (ICT) makes it possible for users to access new tools and applications for information seeking and retrieval. E-Resources have become invaluable research tools that complement the print collection in the traditional library setting.

Anand, &, Shobha, (2021) posit that e-Resources poster several advantages like timeliness, quick search and remote access of up to date materials, made it indispensable in the academic environment. The provision of e-Resources in

tertiary institutions of learning is the new ways of gaining quick access to a great number of research information and dissemination globally. Students, especially those at the postgraduate level would benefit from the e-Resources if they are well harnessed as they will provide excellent opportunities to access scholarly information beyond the reach of in their geographical areas or above limited finances.

Researchers have carried out works in the area of availability and utilization of e-Resources in Nigerian Universities. Like Ozoemem (2019) who stated some challenges related to e-Resources utilization such as download delay, failure to find information, lack of search skills, high cost of access, power outages, unavailability of some websites, and inaccessibility of some websites and difficulties in navigating through e-Resources. Tenopir, (2013) added other problems such as low bandwidth, erratic power supply, inadequate provision of computers, lack of ICT literacy and skills were reported to attribute to the low frequency of utilization of e-Resources in developing countries by the authors. Ozoemelen, (2019) further suggested that students are expected to use e-Resources while they are at the university in order to improve the quality of their academic work. Students need practice and skills to be successful in the use of the available e-Resources.

ICT literacy and skills refer to knowledge of one's information needs, ability to identify, locate, evaluate, organize and effectively create the use and communicate information. It is required that, for active participation in the information society ICT literacy and its skill efficacy cannot be underestimated. To make the best out of the ever-growing list of e-Resources, it is necessary for users to acquire basic ICT literacy and skills necessary for the identification, retrieval and use of e-Resources.

Smart and Kolawole (2022) stressed that the importance of ICT literacy and skills to students cannot be overemphasized because they enable the

effective and efficient use of the e-Resources. These skills help users formulate an effective search in order to identify appropriate information sources, to select the right search tools, to employ suitable search strategies as well as enabling them to evaluate the searched results. Information literate and skillful people will thus, demonstrate an awareness of how they gather, use, manage, synthesize and create information in an ethical manner and will have the information skills to do so effectively [17]. They further viewed that ICT literacy and skills are necessary for students who want to effectively utilize the available e-Resources as they provide necessary base for learning other skills which are required to explore e-Resources. The concept of ICT literacy on use of e-Resource requires that a person recognizes when information is needed, have the ability to find, scrutinize, utilize and then use information ethically to address identified problems or to make decisions. This is so because, whatever the source of information is, users must possess the skill to understand and critically evaluate the information they find. Islam, & Tsuji, (2021) believed that there is the need to train students, especially PG students to be information literate to prepare them search and utilize needed information with adequate skills to navigate and manipulate information technologies. Ogunsanya, (2021) opined that students who have gained employments usually face the challenge of coping with their jobs alongside their research activities, thus, to be effective at their job and at the same time perform well in their research work, there is a need for them to strive to possess the skills required to use the e-Resources.

To Ahmed and Zabed (2013) is that considering the complexity associated with the use of e-Resources, students require ICT literacy and skills to access and use information considering the growth in literature, its volume, variety and complexity; which put severe constraints on the users search for their needed information. The complexity of e-Resources has also led to the tedious search which further discouraged the

students in using library resources. Although most PG students may their own devices like laptop, iPad or mobile phone which exposes them to the use of technology, the use of such electronic devices do not guarantee knowledge of ICT literacy and skills needed to access web-based resources or electronic databases in the library. Ozoemelen, (2019) suggested that the acquisition of ICT literacy and skills is essential for students, in order to evaluate and make ethical use of information and would add value to their researches. The ability to use e-Resources effectively is increasingly becoming recognized as integral part of student's study and a great concern to university libraries. In view of that Kodani, (2012) observed that in using the e-Resources, students when lack skill in locating and evaluating information, it will certainly impeded their effective use [25].

Baro, (2011) on other hand postulated that the electronic nature of e-Resources, demands that users be confident and skilled in the use of ICT tools. These skills include; imputing data, organizing and managing files, describing basic computer functions, familiarity with computer software packages and the ability to navigate the World Wide Web etc. Anand and Shobha (2021); Mboni, and Sydney, (2021) all viewed that PG students are often required to present class seminars on relevant course topics thereby, increasing their demand for the use of e-Resources. Egberongbe, (2021) also observed that e-Resources had remarkable impact on the academic performance of the research scholar, student and all other higher learning institution communities. Considering the research needs of students, it has become necessary for university libraries to make adequate information in print and electronic formats to meet their needs.

Libraries are usually situated within universities purposely to provide effective information services that would enhance teaching, learning, and research within the university community. Research is crucial to the survival of universities being the fundamental process of

knowledge acquisition. Research is essential within the university environment as it serves as a major determinant of the educational quality of an institution [22]. It was established that higher research stance adds value to the institutional reputation, visibility and recognition. The introduction of electronic information resources in Nigerian libraries was geared towards that and to further facilitate access to vast collections of digital books and electronic journals for all staff and students

#### **A. Statement of the Problem**

University system is advancing in Nigeria as new technologies are being introduced into teaching, learning and research activities. However literatures [9]; [10]; [14]; & [20] all revealed that e-Resources are grossly underutilized despite the huge investment made by university libraries to ensure their provision. It's also observed that, considerable investments are being tailored toward acquiring e-Resources in Nigerian universities bringing up the issue of the extent of usage and users' satisfaction with these resources in these libraries. Catts, (2017), revealed that, practical uses of e-Resources are not up to the worth in comparison to investments made in acquiring these resources. The underutilization of e-Resources could be attributed to lack of ICT literacy and skill.

Where such is the case, Federal University Dutsin-Ma and other public universities spend a lot of Internal Generated Revenue (IGRs) on e-Resources. PG students would also be missing out in research materials that would have otherwise improved the quality of their research work thereby lowering the standard of quality education and services. It is against this background that this study investigated the extent to which ICT literacy and skills could influence e-Resources utilization by PG Students in Federal University Dutsin-Ma, Nigeria.

#### **B. Objective of the Study**

The main objective of this study is to investigate on the extent and relationship on ICT literacy, ICT skills and challenges on the use of e-Resources by PG students of the Federal University Dutsin-Ma, Nigeria. Therefore these specific objectives were formulated:

1. To examine the extent of ICT literacy on use of e-Resources by PG students of Federal University Dutsin-Ma, Nigeria.
2. To examine the extent of ICT skills on use of e-Resources by PG students of Federal University Dutsin-Ma, Nigeria.
3. To examine the extent of level of use of e-Resource among the PG Students in the Federal University Dutsin-Ma, Nigeria?
4. To identify the extent of challenges of use of e-Resources among the PG Students in the Federal University Dutsin-Ma, Nigeria?
5. To examine the relationship of ICT literacy, ICT skills and use of e-Resources by PG students of Federal University Dutsin-Ma, Nigeria.

#### **C. Research Questions**

The study proposes to answers the following research questions:

1. What is the extent of ICT literacy level on use of e-Resources by PG students of Federal University Dutsin-Ma, Nigeria?
2. What is the extent of level of ICT skills on use of e-Resources by PG students of Federal University Dutsin-Ma, Nigeria?
3. What is the extent of level of use of e-Resource among the PG Students in the Federal University Dutsin-Ma, Nigeria?
4. What is the extent of challenges of use of e-Resources among the PG Students in the Federal University Dutsin-Ma, Nigeria?

5. What is the relationship among ICT literacy, ICT skills and use of e-Resources by PG students of Federal University Dutsin-Ma, Nigeria?

#### **D. *Significance of the Study***

This study therefore would no doubt, contribute to the body of literature in e-Resources usage which would assist other researchers in the field of ICT, Educational Technology, Library and Information Science and other related fields. This study would as well reveal the extent to which PG students in the universities make use of e-Resources thereby, providing a guide for library administrators in decision making and in formulating instructional programmes.

#### **E. *Information and Communication Technology (ICT)***

Information and Communication Technology (ICT) comprises of electronic devices such as computer, radio, television, telephone, satellite, and the Internet. ICT refers to forms of technologies that are used to transmit, store, create, share or exchange information [12]. ICT are devices, applications, services and technologies, some of which run over telecommunication networks. ICT consist of hardware, software, network and media for collecting, storing, processing, transmitting and presenting information (voice, data, text and image) as well as related services [20]. Duta & Martínez-Rivera, (2015) defined ICT as electronic technologies used for collecting, storing, processing, and communicating information.

According to Guemide, & Benachaiba, (2012) use of different ICT has become inevitable for students in learning as it permeates the education environments and underpins the very success of 21st century education. It was also found out by Buba, Song, and Abdullahi, (2021) that ICT facilities enable students acquire more information and have adequate knowledge about information ICT literacy program and search terminologies which initiate the search process. They concluded

that undergraduate students have adequate information ICT literacy skills but experience heightened uncertainty with inconsistent information that requires construction and interpretation.

Duta and Martinez-Rivera (2015) posited that we live in a society that is immersed in technology development, where progress of ICT has changed our way of life, impacting many areas of knowledge. According to Mikre (2011) also ICT helps expand access to education as they are tools for extending education to opportunities both in a formal and in a non-formal way. Furthermore, to [12] ICT is used in education in the aspects of developing course materials, delivering and sharing content, communication between learners, teachers and the outside world, creation and delivery of presentation and lectures, conducting academic research, administrative support and student enrolment.

#### **F. *ICT literacy and use of e-Resource***

As revealed by Kenchakkanavar, (2014), ICT literacy and use of e-Resource has been expanded to deal with the needs by the concept such as information over load brought about by the advent of digital technologies, as well as the desire to meet the prerequisites knowledge to benefit from these resources. A lot of publishable articles are written yearly in journals and others published in books to boost up use of such e-Resources. Advancement of informatics competencies, research skills, and ICT literacy help boost use of e-Resource [23].

Echem, and Wokoma, (2022) asserted that ICT literacy is ever more vital in the current environment of fast technological transformation and growing information resources. Due to the growing difficulty of this environment, students are confronted with assorted, plentiful information options in their academic studies and in their personal lives. Issa, and Daura, (2019) added information accessible through the Internet comes in unsorted formats, raising questions about its genuineness, validity, and trustworthiness.



Information is now available via various media, such as: graphical, aural, and textual, and these create new difficulties for students in evaluating and perception of it. It encompasses much more than access to information but also affords students the ability to use computers, the Internet and related paraphernalia [21].

Ogunsanya, (2021) in his study found significant influence of ICT literacy skill on electronic resources utilization. An information literate person is competent in knowing the worth of information required access to the required information efficiently and its sources critically; know the economic, legal, and social concerns involved in the exploring of that information while using it ethically [23].

Baro (2011) conducted a study on use of e-Resource education in library schools in Africa to find out librarianship and role in the advancement of ICT literacy on use of e-Resource in our universities. He found few library schools have fruitfully incorporated course on ICT literacy on use of e-Resource in their curriculum in the whole Africa. The study of Issah, Blessing & Daura, (2009) revealed that ICT literacy and skills have not taken the preferred solid root among Universities in Nigeria signified that ICT literacy on use of e-Resource has not been integrated into the curriculum of higher education programmes in Nigeria and even in Africa. They surmised that in Nigeria there is need to be up and doing in the promotion and advocating for the inclusion of ICT literacy and skills into the curriculum so as to have a course on ICT literacy on use of e-Resource universities.

#### **G. Skills and Use of e-Resource**

Kodani, (2012) stressed that the skills and efficacy are required on users to be able to locate information and it depends on the context in which students apply their information ICT literacy and skills, in the use of the library and other electronic resources in databases. However, increasingly students seek information using internet search engines where there is often no filter on the quality

of the information located. Echem & Wokoma, (2022) reported relationship between perception and electronic resources of undergraduate students. They further suggested while viewing Issa, et al., (2019) for Education and training are needed to help students acquire the skills to not just locate, but also to evaluate information.

#### **H. Access to e-Resources among PG Students**

On this point Olorunfemi, & Ipadeola, (2021) stated that students have access to both prints and e-Resources for assignments, thesis writing and preparation for examinations. Information is now accessible both in prints and electronic format. Buba, Song, & Abdullahi, (2021) hold that a lot of students still use print materials as a source of information in Nigeria universities instead of using ICT tool that is very well-organized and dependable. Egberongbe, (2021) postulated that access of e-Resource needs ICT literacy and skill which are all-inclusive capabilities in information age, which helps people to recognize the needs for information and effectively use it after assessment. Progressively, the rapid extension of information technology has changed information services and process in libraries. Baro, Endouware & Ubogu, (2020) stated that significance of having competency in use of e-Resource increases the privilege for students' to be independent learners, as they continue to use a wide range of assorted information sources. That was in order to increase their knowledge, ask critical questions and enhance their critical thinking competencies in learning.

Islam & Tsuji (2021) carried out a study to evaluate the on use of e-Resource skill among graduate students of Information Science and Library Management in the University of Dhaka (ISLM), Bangladesh, to set up their strength and inadequacy and revealed that students have limited competencies in on use of e-Resource proficiency, because it was not taught in their course curriculum. Libraries and Librarians have roles to play in educating people for effective and efficient information use by teaching them information competencies at every stage of education to

facilitate them to become literate citizens of the country. Mboni, and Sydney, (2021) revealed that undergraduates demonstrated higher usage levels of e-Resources than postgraduates. They further opined that Effective access to and usage of e-Resources is the outcome of students' being competent in using computers.

Sahak & Saad (2012) investigated the use of library resources, services and facilities among first and third year students in University in Malaysia. They reported that students visited the library in order study and use the Internet. Also students often visited the library to do assignments, discussions with friends. They found that Library online database, library OPAC, project paper, EZ-Proxy, Full text journal, encyclopedia, thesis and statistical reports were less frequently used. This means that the level of ICT literacy and skills of students in the university was low. Since OPAC that serves first point of call are less used, that means that the whole library collections were less consulted.

Fasola & Olabode, (2013) asserted that the low rate of ICT literacy on use of e-Resource has hindered the effective and efficient use of library resources, especially e-Resources. Without the ability to maneuver and use information resources efficiently, the investment in information technology projects will not be achieved. Without ICT literacy and skills, students will continue to underutilize library resources and e-Resource [11]. Thus, they however suggested that the library have to upgrade and build up its stock to address the need of the students, supply active internet connectivity to enhance simplicity of electronic search and databases and prepare and educate staff in interpersonal to enhance staff-clientele relations. And that constant user training ought to be done in the library to instruct and teach on the utilization of the library and e-Resources.

### ***1. Challenges of use of e-Resources by PG Students***

Smart, & Kolawole (2022) on the challenge of using e-Resources said that students are confronted with a lot of challenges when acquiring

ICT literacy on use of e-Resource. To them this is due to the rapid growth in information resources which comes in various media and with the advancement in ICT as well as remote access in remote areas especially during pandemic like Covid-19. Students are often confronted with challenges to efficiently and effectively use information resources. Smart, & Kolawole (2022) further established that erratic power supply, slow internet access, and high cost of data subscription were the three major challenges to the effective use of e-resources during the COVID-19 lockdown. Their findings implied that there was significant relationship between information literacy skills and the use of e-resources by undergraduate students.

Egberongbe, (2021) added that they go through the wrong sources and also use retrieval tools on trial and error thereby wasting a lot of time due to lack of competencies /skills in using information resources. Students encounter difficulty when using library resources. Ozoemelen, (2019) admitted that there is need to assist students to have a good library use culture that involves the use of resources. It was agreed that the level of the usage of the e-Resources by the undergraduates is low. According to Baro, Endouware & Ubogu, (2020), the major difficulties that was identified was lack of information retrieval competencies for exploiting e-Resources, this made the level of usage of resources by students very low.

## **II. RESEARCH DESIGN**

Descriptive Survey research design was adopted for the study by means of quantitative approach. The population of this study consists of all the postgraduate students in Federal University Dutsin-Ma, Nigeria with the total number of 2100 students. Sampling technique adopted was a purposive selection and proportionate sampling technique. To determine the sample size, an online sample size calculator (Qualtrics.com) was used at 95% with 5% margin error. A total number of the sample size selected was 325. So this made up of some PG students purposively and proportionately

derived from various programs as the respondents for the study.

The instrument that was used for data collection was a self-structured and validated questionnaire. This contained relevant questions on ICT literacy and skills on use of e-Resource by PG Students. Section A, provided demographic information of respondents, while section B were questions separated to be answered on the extent of the level of ICT literacy and skills on use of e-Resource as well as on the relationship among the three variables structured on using a 5 point of Likert scale. To ascertain the reliability of the instrument and the consistency, content validity was established using pilot on 25 PG Students outside of the sample size. Cronbach’s Alpha of 0.94 was realized indicating it as very reliable. The data collection was done on questionnaires that were administered and collected among PG students Dutsin-Ma, offering various postgraduate programmes in Federal University Dutsin-Ma. Data was collected within four weeks with permission from the university authorities.

The data analysis employed was inferential descriptive statistics. The responses were analyzed using frequency distribution, standard deviation and mean for the extent of the level of ICT literacy and level of ICT skills; while bivariate analysis using pearson product moment correlation (PPMC) was used to analyze on the relationship among the variables (ICT literacy, ICT skills , use of e-Resources).

### III. RESULTS

In this section, the data collected were analyzed to provide answers to the research questions raised for the study. The responses were rated on a four-point Likert-type scale. The data presentation was done according to the research questions and analyzed as said earlier to provide answers to the research questions.

Table 1: Frequency Distribution on Gender

		F	%	Valid %	Cumulative %	Mean	SD
Valid	1.0	140	59.6	59.6	59.6	1.40	.491
	2.0	95	40.4	40.4	100.0		
	Total	235	100.	100.0			

The gender distribution indicated (**140=59.6%**) male and (**95=40.4%**) female which is moderately distributed.

#### Research Question One: What is the extent of ICT literacy on use of e-Resource among PG Students in Federal University Dutsin-Ma, Nigeria?

Table 2: Descriptive on extent of ICT literacy level on use of e-Resource

	N	M	SD
I undergone ICT literacy training	235	2.44	1.31
I have ICT literacy Certificate	235	1.79	1.19
Training offered by my faculty/department Formal education	235	<b>3.00</b>	1.25
I have been attending workshops/seminars	235	1.74	1.14
I can attend IT programme	235	<b>3.17</b>	1.14
I can only use e-resources by trial and error	235	1.72	1.07
I can only use e-resources by assistance from my colleagues	235	1.62	1.07
I can only use e-resources by guidance from library staff	235	<b>3.05</b>	1.16
I can only use e-resources by self-study(user’s guide)	235	1.84	1.12
I am have awareness relating to the rights, ethics, data protection, copyright, plagiarism and other intellectual property issues	235	2.05	1.212
Valid N (listwise) Total	235	20.6	4.153

Table 2 presents the extent of ICT literacy of PG students on use of e-Resource. Overall, the extent of their ICT literacy level was found to be moderately low with a highest (mean score =3.1)



and standard deviation (SD=1.1) which is stating that *I can attend IT programme*. It further indicated (mean=3.0) and (SD=1.2) representing the item that stated *I can only use e-resources by guidance from library staff* which means the literacy level is low on using the e-Resources; meaning they needed guide to use the e-Resources. The result also proved the students with (mean score=2.0) and (SD=1.2) to have low *awareness relating to the rights, ethics, data protection, copyright, plagiarism and other intellectual property issues*. It also on the item *I undergone ICT literacy training* the mean score was showed (mean=2.4) and (SD=1.3). The grand mean showed (mean=20.6) and standard deviation of (SD=4.1). This translate that majority of the PG students sampled in the university could not efficiently use the e-Resources due to low level of ICT literacy in using them. This result tallied with Mboni, and Sydney, (2021) who reported that the students scored below 50% on the entire measured information literacy competency. They further associated inadequate usage of e-resources with the lack of awareness; hence, they reported use of e-resources among postgraduate students was limited

**Research Question Two: What is the extent of ICT skills on use of e-Resource among PG Students in the Federal University Dutsin-Ma, Nigeria?**

Table 3: Descriptive on Level of Skills on use of e-Resource

	N	M	SD
I can connect my device/computer to network/internet	235	2.77	1.557
I can open browser and use search engine	235	<b>3.08</b>	1.254
I am able to identify a knowledge in a subject area	235	1.97	1.344
I can identify and search a topic	235	<b>3.21</b>	1.101
I can assess current knowledge and identify gaps	235	2.01	1.267
I am able to identify types of information that best meet my information need	235	2.00	1.284
I can input data, organize and manage files, use basic computer functions,	235	1.72	.936
I can plan, use methods for locating information and data	235	2.40	1.177

I am able to determine my search question clearly in an appropriate statement	235	2.08	1.068
I can make a search using appropriate keywords, concepts and setting limits	235	2.51	1.192
Valid N (listwise) Total	235	21.5	4.671

On this analysis on table 3, it showed that across the university a proportion of the total number of respondents *can identify and a search topic* as it indicated (mean=3.2) and standard deviation (SD=1.1). The result also reported mean score (mean=3.0) and (SD=1.4) on the item *I can open browser and use search engine*. Furthermore on the item *I can connect my device/computer to network/internet* it showed score (mean=2.7) and (SD=1.5). Again on the item *I can make a search using appropriate keywords, and concepts and setting limits* the mean score was (mean=2.5) and (SD=1.1). However, the total grand mean score on all the items as (mean=21.5) with (SD=4.6). This showed moderately low level of ICT skill in using e-Resources among the PG students of the university. The result differ significantly partial from Smart and Kolawole (2022) who reveled that students possessed a high level information literacy skills.

**Research Question Three: What is the extent of use of e-Resource among the PG Students in the Federal University Dutsin-Ma, Nigeria?**

Table 4: Descriptive on extent of level of use of e-Resource

	N	M	SD
I made better grades using available e-resources due to my sufficient skills	235	2.23	1.217
Using ICT facilities enable me acquire more information for my course of study	235	2.16	1.132
I have gained more experience after using e-resources	235	2.02	1.150
Adequate computers and its technologies are provided in the University	235	2.68	1.206
There are adequate e-resources available for students to access in the university	235	2.34	1.253

I gather, locate and access the information and data I needed	235	2.43	1.250
I am able to use a range of retrieval tools and resources effectively	235	2.25	1.147
I can use appropriate techniques to collect new data	235	<b>2.73</b>	<b>1.467</b>
I can distinguish between different information resources and the information they provide	235	2.50	1.397
I am able to assess the quality, accuracy and relevance of information	235	2.11	1.222
Valid N (listwise) Total	235	21.6	4.077

On the extent of level of use of e-Resource the score showed almost balanced scale. The highest mean score on the level of satisfaction is significant (mean=2.7) with (SD=1.4). Another item is *adequate computers and its technologies are provided in the University*. This also has a score of (mean=2.6) and (SD=1.2) this indicates low availability of the devices for the access to e-Resources thereby lowering the extent of use of the e-Resources in the university library. The respondents also responded on the item *I can distinguish between different information resources and the information they provide* which scored (mean=2.5) and (SD=1.3). This can be deduced that the postgraduate students are partially satisfied using e-Resources in the university. This supported Buba, et al., (2021). Who viewed that although ICT facilities enable students acquire more information and have adequate knowledge to search for information; students experience heightened uncertainty with inconsistent information that requires construction and interpretation. They also hold that a lot of students still use print materials as a source of information in Nigerian universities instead of using ICT tool that is very well-organized and dependable. Thus their use of e-Resources is still low.

**Research Question Four: What is the extent of challenges in use of e-Resources among the PG Students in the Federal University Dutsin-Ma, Nigeria?**

Table 5: extent of challenges of use of e-Resources

	N	M	SD
I am able to cite printed and electronic sources using suitable referencing styles	235	2.49	1.333
Lack of professionals trained in literacy and skills on use of e-Resource	235	2.34	1.259
Lack of concern among librarians staff and information professionals	235	<b>2.51</b>	<b>1.268</b>
Absence of well developed syllabus in the curriculum on literacy and skills on use of e-Resource	235	2.42	1.351
Lack of understanding of the concept "literacy on use of e-Resource "	235	2.25	1.390
Lack of well-equipped library where literacy and skill on use of e-Resource can be practiced	235	2.34	1.259
Poor access to computers and internet in the university	235	<b>2.51</b>	<b>1.268</b>
Lack of training on how to effectively use the e-resources	235	2.42	1.351
Inadequate ICT infrastructure for teaching Literacy and skills on use of e-Resource	235	<b>2.25</b>	<b>1.390</b>
Low level of computer literacy on using software packages or navigate the World Wide Web	235	2.08	1.299
Total Valid N (listwise)	235	21.7	5.250

On table 5 above the findings indicated experience of significant challenges among the PG student users of the e-Resource in the university. For instance on the item stating lack of concern among librarians staff and information professionals; the result showed mean score of (mean=2.5) and (SD=1.2). Furthermore the respondent also reported Poor access to computers and internet in the university with the mean score of (mean=2.5) and (SD=1.2). The result also indicated Inadequate ICT infrastructure for teaching Literacy and skills on use of e-Resource with the mean score of (mean=2.2) and (SD=1.3). In totality the result

corroborated with Ozoemelem (2019) who stated some challenges related to e-Resources utilization such as download delay, failure to find information, lack of search skills, high cost of access, power outages, unavailability of some websites, and inaccessibility of some websites and difficulties in navigating through e-Resources. This also go in line with Tenopir, (2013) who added other problems such as low bandwidth, erratic power supply, inadequate provision of computers, lack of ICT literacy and skills were reported to attribute to the low frequency of utilization of e-Resources in developing countries by the authors.

**Research Question Five: What is the relationship between ICT literacy, ICT skills and level of use of e-Resources among the PG Students in the Federal University Dutsin-Ma, Nigeria?**

Table 6: Relationship between of level of ICT literacy, skills and use of e-Resources

		ICTL For ER	ICTS For ER	ER usage
ICTL For ER	Pearson Correlation	1	-.047	.085
	Sig. (2- tailed)		<b>.469</b>	<b>.195</b>
	N	235	235	235
ICTS For ER	Pearson Correlation	-.047	1	.030
	Sig. (2- tailed)	<b>.469</b>		<b>.651</b>
	N	235	235	235
ER usage	Pearson Correlation	.085	.030	1
	Sig. (2- tailed)	<b>.195</b>	<b>.651</b>	
	N	235	235	235

On table 6 results concerning the relationship among the literacy, skills and use of e-resources indicated significant positive association with higher score (r=.651) between skills and usage, while indicating moderate score between literacy and usage. Findings corroborate with that of Ogunsanya (2021) who reported significant relationship between information literacy skills and electronic resources utilization among tertiary

institution students. It also aligned with Echem, and Wokoma, (2022) who reported moderately strong relationship between perception and electronic resources.

**J. Summary of findings**

From the result the major findings are outlined below:

- i. The research findings on the demographic characteristics of the sampled students showed the distribution in terms of gender.
- ii. The extent of ICT literacy and skills and challenges on use of e-Resource among the postgraduate students was found to be significantly low as more than half of them agreed on lack of certificate of ICT, did not attend ICT training, lack of knowledge in a subject area, could not identify a search topic, could not define it using simple language, could not identify different formats in which information may be provided, could not determine their search question clearly and in an appropriate language as well as cannot connect device/computer to network/internet or use the e-Resource without the help of others.
- iii. The postgraduate student do face challenges when acquiring ICT literacy and skill on use of e-Resource because of lack of computers and well-equipped library for practicing, lack of access to computers, inadequate ICT infrastructure for teaching on how to acquire ICT literacy and skill on use of the e-Resource, lack of understanding of the concept “ICT literacy and skill on use of e-Resource”, lack of seriousness of lecturers in teaching, lack of professionals to trained, lack of interest among librarians and information professionals, and absence of curriculum or well developed syllabus on that area. These were so far the challenges identified among others.

#### **IV. CONCLUSION**

This study assessed on the extent and relationship on ICT literacy, skills and challenges in the use of e-Resources by PG students in federal university Dutsin-Ma. It identified the practical and literature gaps as the bases that ignited the study. Some related literatures were reviewed in relation to the constructed variables; and it was followed with a survey research design. The main essence of ICT literacy on use of e-Resource skill is to equip oneself with the knowledge necessary for acquiring relevant information and for making effective, efficient and ethical use of information resources which is essential for students. The influence or association of ICT literacy and skills on use of e-Resource is paramount to the academic performance. That is the ability to find and retrieve information effectively with a transferable skill useful while in the university and for future academic endeavour. The study revealed that PG students do not significantly utilize the available e-Resources and their low ICT literacy and skills have not influenced their use of e-Resources. This is due to challenges such as lack of awareness of the available e-Resources in the library. It also concluded that ICT literacy and skill significantly related thus influences use of e-Resources. The study also concluded that there were challenges in using e-Resources in the university as inhibiting factors resisting the use of e-Resources which cut across unavailability and inaccessibility of e-Resources, lack of awareness and training, lack of requisite computer skills as well as unstable network and power supply.

#### **K. Recommendation**

Based on the findings of this study, the following are recommended;

- The researcher therefore recommend that more attention should be given to ICT literacy and skills on use of e-Resource by ensuring that students acquire relevant competencies which are essential to use

information resources to enhance based practice.

- The University authority should provide infrastructures/equipment and all necessary ICT tools; by work with ICT and educational technology lecturers and professionals to adopt teaching methods that will be fascinating to students.
- Postgraduate students should be properly trained and giving orientation on how to effectively use the computers and other ICT infrastructure
- Postgraduate students should be provided or given access to computers to be practicing ICT literacy and skills on use of e-Resource through the aid provided by the library staff.
- The university management and library should include ICT literacy on use of e-Resource as a course in the university curriculum whereby students can be taught and trained extensively.
- The university and library staff should ensure that students are trained on how to effectively use information resources (print and e-Resources) in the library.
- The management of Federal University Dutsin-Ma should ensure a continuous provision of e-Resources with adequate information communication technology tools to facilitate their use.
- The study also recommended that of the University should promote the teaching of ICT literacy and skills and computer self-efficacy to PG students, in the use of e-Resources and other ICT tools to improve the quality of their academic work.
- There should be provision in the libraries to organize workshops to enhance ICT literacy and skills

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