INTERNET RESOURCES FOR LEARNING AND RESEARCH: CRITICAL ISSUES FOR UNDERGRADUATE STUDENTS IN A DEVELOPING COUNTRY

Charles O. Omekwu Ph.D[1]; Anthonia N. Ejikeme Ph.D[2]; Chidiebere Lambert Okere[3]; Felicia Ugwu Ph.D[4] & Promise Ilo[5]

[1]Professor and Attorney at Law, Department of Library and Information Science Faculty of Education, University of Nigeria, Nsukka. charles.omekwu@unn.edu.ng
[2]Deputy University Librarian, Nnamdi Azikiwe Library, University of Nigeria, Nsukka anthonia.ejikeme@unn.edu.ng
[3]Department of Library and Information Science, Faculty of Education, University of Nigeria, Nsukka. chidiebere.okere@unn.edu.ng
[4]Principal Librarian, Nnamdi Azikiwe Library, University of Nigeria, Nsukka. felicia.ugwu@unn.edu.ng
[5]University Librarian, University of Nigeria, Nsukka. promise.ilo@unn.edu.ng

ABSTRACT

This study investigated the utilization of internet resources for learning and research by undergraduate students of university of Nigeria, Nsukka, Enugu State, Nigeria. The study identified the internet resources available to students, the purpose for using these resources, the level of satisfaction derived in the use of the resources, the possible challenges in using the resources and the way forward. A descriptive survey research design was adopted for the study. A sample of 180 undergraduate students, approximately 10 per cent of a total student population of 1797, was drawn from five departments in the university under study using a multi-stage sampling approach, while data were collected using a questionnaire. Analysis relied on descriptive and inferential statistics, using mean and standard deviation. Findings revealed that internet resources were highly available to undergraduate students of university of Nigeria Nsukka, for learning and research. The study also revealed that even though the students were highly satisfied with the level of internet resources for learning and research, they lacked adequate search skills necessary for accessing and using a range of internet resources available to them. One critical implication of the findings is the need to train undergraduates to master the array of retrieval tools that form part of the intricacy of materials and services found in modern digital libraries that have been described as a sequence of interactions at the interface. This will help to improve their learning and research experience.

Keywords: Internet Resources, Learning and Research, Undergraduate Students, Internet Retrieval Tools/Literacy, Nigeria

INTRODUCTION

The advent of digital technology has brought about a paradigm shift in the learning and research ecosystem which is no longer confined within the school walls nor restricted to regimented opening hours, this explains the need to create an enabling environment for learning and research, which is not physically restricted or even limited by a mechanistic adherence to lecture schedules. The emerging paradigm, no doubt, emphasizes a change in the goal of the learning and research processes. Consequently, education is consistently taking a transformative dimension, with the development of technology rapidly creating new frontiers for learning and research in cyberspace for academic institutions. The duality of the new learning and research ecosystem perhaps offers an opportunity for students to increase their access to information, which is catalytic to their learning and research initiatives. The dream of every tertiary institution is to achieve their vision and the internet platform has become an essential tool for them to achieve the vision as well as maximize their teaching, learning and research. For most undergraduates, internet use appears to be an exciting experience, especially considering the difficulty of obtaining information for the vast majority of people in developing countries.

Nigerian university undergraduate students and their counterparts in other countries, are expected to carry out different research tasks as they progress in their academic activities. The quality and quantity of the internet resources available to these young learners and researchers will determine the level of their progress as students. On this premise, Luambano and Nawe (2004) affirm that the internet is a very important research tool in every academic institution. This is because it plays a pivotal role in meeting the information needs of these knowledge institutions by granting access to information on a global dimension helping them in disseminating their research output. Cross-border interactions between students and teachers/lecturers have been greatly facilitated by internet platforms, blurring the barriers of time and space.

Notwithstanding the numerous learning and research opportunities available in the internet environment, navigating it comes with some critical challenges. Firstly, the internet environment can become disruptive when undergraduates become engaged in various negative activities such as watching pornographic films, internet scams, and unhealthy techno-addiction. Secondly, it may be vital to examine whether undergraduate students have the appropriate skill level to make functional use of internet resources. The right skill level will enable them to navigate the complex labyrinth of the internet environment to support their learning and research activities. According to Watt and Ibegbulam (2005), the value of internet resources largely depends on the user's ability to navigate the labyrinth of electronic resources available via technology-based terminals. Similarly, Akande (2003) observed that one of the major problems of maximizing access to and use of internet resources is the lack of adequate skills for information retrieval, which results in low usage and patronage of internet resources. The Report of the American Library Association Presidential Committee on Information Literacy (2001) affirms that an essential skill for an information literate user is to know when information is needed and effectively located, evaluated and utilized. (Tyagi, 2011) has rightly contended that the ability to efficiently utilize electronic resources depends on having the fundamental skills in computer application, acquiring the knowledge of what is available and how to use it, as well as the capacity to define a research problem. Furthermore, (Okiki, 2012) concluded that lack of training, inadequate infrastructure and high cost of accessing some electronic materials pose challenges to adequate and constant utilization of internet resources.

Specifically, it is worrisome to note that Nigerian university students' are also faced with different challenges with regard to utilizing internet resources. For instance, researchers have acknowledged the nation's inadequate telecommunication infrastructure (Adomi, 2005). Inadequate infrastructure, lack of skills in navigating electronic resources, high cost of internet subscription and restricted access to electronic resources are also major challenges limiting the use of electronic resources by undergraduates in Nigerian universities. According to Baro et al. (2011), out of the 104 universities in Nigeria in 2009, only 40 have internet connectivity, implying that sixty-seven per cent of the universities in Nigeria are not internet-connected. Although a visit to most Nigeria universities will suggest the presence of internet services, the poor speed of access and inadequate bandwidth remain major issues. Beyond these challenges, there is the need to investigate, not just undergraduate students' use of internet resources, but also their internet usage for learning and research. This is the critical point where the present study departs from most studies on internet use by undergraduate students.

Purpose of the Study

This study examines the awareness and use of internet resources for learning and research by undergraduate students in the Faculty of Education University of Nigeria, Nsukka. Specifically, the study seeks to:

1. identify the available internet resources to undergraduate students for learning and research in the Faculty of Education, University of Nigeria, Nsukka;
2. identify the sources where undergraduate students get their resources for learning and research in the Faculty of Education, University of Nigeria, Nsukka;
3. identify undergraduate students' purpose of using internet resources for research in the Faculty of Education, University of Nigeria, Nsukka;

4. determine the undergraduate students' level of satisfaction with internet resources available to them for learning and research in the Faculty of Education, University of Nigeria, Nsukka;
5. determine the challenges associated with the use of internet resources by undergraduate students for learning and research in the Faculty of Education, University of Nigeria, Nsukka; and
6. determine the strategies for enhancing the awareness and use of internet resources by undergraduate students for learning and research in the Faculty of Education, University of Nigeria, Nsukka.

LITERATURE REVIEW

Recent literature has acknowledged that modern technologies have drastically affected the way students undertake research and learning in tertiary institutions. Studies have also shown that technology has become one of the key determinants of human behaviour in today's world (Ganiyu, Edale, & Oluwafemi, 2014), and has now become a norm for social interactions (Priyanka & Kumar 2013). In other words, computer and internet technologies have affected every sphere of human life. Ramsy and Rehman (2004) contend that students are not left out in this new era of information technology, which has positively affected students' research and learning. Several studies have supported the view that internet utilization is most prevalent among younger, educated individuals (e.g., Abubakar & Adetimirin, 2015). Aiguo (2003) investigated the importance of internet in students' academic performance in selected tertiary institutions in Nigeria and found that most of the students were computer literate and merely access relevant academic materials through the cybercafes. Students in Aiguo's study also indicated that internet usage improves their examination preparation. Electronic journals and e-books are among the resources often used. However, power outage, slow internet speed, lack of computer terminals, too many hits or information overload and insufficient computer are some of the problems affecting students' effective internet access or usage.

Studies have shown that internet mobile learning among college/university students has brought about a profound and diverse pool of knowledge. For instance, Ajayi, Shorunke and Aboyade (2014) found out that the majority of students from Adamawa State University in Nigeria use the internet for education and entertainment; they also use their mobile devices for internet access. Similarly, Fasae (2011) found out that science students in Nigerian private universities are regular internet users who make use of the internet facilities on their smartphones for a range of education- and entertainment-related activities (such as emails, social media and search engines). However, poor internet connectivity and the high cost of data subscription were identified as major problems confronting the students. According to Onyekweodiri and Agbo (2015), there is an increase in mobile device dependency for internet access among agricultural science students in Nigeria. In the same survey, it was revealed that most of the students use the internet for education and entertainment but prefer to use textbooks among print materials and the Electronic Essential Agricultural library (TEEAL) for the electronic resources. Omotunde et al. (2014) reported that the majority of undergraduate students in Nigeria who participated in their study had access to the internet through their mobile telephones and laptops using a modem as a router, whereas a few accessed the internet through the university digital centre while none accessed the internet through the university library. It was also identified that using the internet made information retrieval easier, which positively impacted the students' educational, moral, social etc. development.

A current study which looked at the use of smartphones in Nigerian colleges showed that 38.2 per cent spend about 1 to 5 hours per day on their phones, 98% communicate with families and friends with their phones, about 75 per cent use their smartphones for social networking, and only 24 per cent use their smartphones for academic activities (Ofodile & Ifijeh, 2013). This result suggests that some students do not use mobile devices to facilitate their studies. Another study conducted among Nigerian students identified the positive effects of mobile use for education, namely easy access to information, instructional usage and personal convenience (Anaraki & Babalhavaeji, 2013). Prangy and Rabindra (2013), in their study of two universities in Southwest Nigeria, found that the students use their portable devices for educational purposes, like exchanging education-related messages and academic files with

classmates, searching the internet and library databases for academic materials, practicing online quizzes or tests and holding discussions with classmates, among others. In the same vain Sheikhshoaei and Oloumi (2011) carried out a study of undergraduate students at Igbinedion University, where it was reported that they primarily use mobile phones to search academic materials and consult scholarly articles for assignments, the students indicated that using the internet on their mobile phones helps them to search and have quick access to information. The study also reported that email was the most commonly used among staff and students, followed by the WWW, discussion groups, UseNet News and FTP in descending order. Telnet, Gopher and WAIS were not commonly used among the respondents. (Jones, Johnson-Yale, Perez and Schuler 2007) in their random representative sample survey of 7,421 undergraduates from 40 college campuses across the United States, found out that all the students used the internet for academic purposes and that most of them (84%) believed that the internet had positively impacted their academic lives.

Hinson and Amidu (2005) study identified that lack of electronic literacy skills among final-year students at Ghana's oldest business school is one of the greatest challenges in using internet resources, with a total of 48% of the respondents indicating that they lacked adequate skills to access internet resources. This paints a gloomy picture of low levels of internet skills and literacy because one would assume that final-year university students should have developed sufficient ICT literacy to use the internet, given that information forms an integral part of their research and learning. Savolainen (2002) describes network literacy as: having the knowledge of the information resources available on the internet, taking skillful use of ICT tools to access network resources, judging the relevance of information, and using CMC tools.

In a study carried out by Abubakar and Adetimirin (2015) revealed that ICT skills had a positive relationship with the use of electronic library resources; that is, the more ICT skills students had, the more they used electronic resources. In the study conducted by Kumar, Singh, and Yadave (2011) on students of Engineering Colleges of Punjab, Haryana, and Himachal Pradesh States of India, on factors affecting international students' use of information services they reported that lack of ICT skills is one of the inhibitors of the use of electronic resources by students, even though the students indicated that electronic resources use has improved their reading habit, expanded their reading possibilities and made reading more enjoyable. Most students read for academic purpose and not for leisure.

METHODOLOGY

This study adopted a descriptive survey research design. The study area is Enugu State located in the Southeast Nigeria. Precisely, the study was conducted among undergraduate students of the Faculty of Education University of Nigeria, Nsukka, Enugu State. The population of the study comprised 1,797 undergraduate students of the selected five departments in the faculty, namely Department of Adult Education, Department of Social Science Education, Department of Educational Foundation, Department of Health and Physical Education and Department of Library and Information Science, University of Nigeria Nsukka.

A sample of 180 undergraduate students, which is approximately 10 per cent of the entire student population was drawn from the five departments. Multi-stage sampling technique was used to draw the sample. The first stage was the selection of five departments from the Faculty of Education using the balloting sampling technique. It involved writing out the seven departments in a different piece of papers and randomly selecting five. The second stage involved the accidental sampling technique (sometimes known as opportunity sampling) used by the researchers to select the respondents. The instrument for data collection was a two-part questionnaire. Part one was concerned with the personal data of the respondents, requiring such information as name of department, year of study, gender and age group. On the other hand, part two was made up of eight clusters which covered the various aspects of the use of internet resources for learning and research. For analysis, the data collected was sorted, tallied, and the number of frequencies was recorded. It was built into tables and used to compare the findings of existing literature. Mean was used to indicate the rank order of responses.

PRESENTATION OF RESULTS

Table 1: Participant's Level of availability of Internet Resources for Learning and Research

S/N	Internet Resources	HA	A	LA	NA	TOTAL	$\bar{x}$	DECISION
1	Electronic Books	65	55	19	41	180	2.91	Accepted
2	Electronic Reference materials	44	84	25	27	180	2.81	Accepted
3	Electronic Journals	54	55	33	38	180	2.69	Accepted
4	Electronic Thesis and Dissertations	42	71	33	34	180	2.67	Accepted
5	Online Newspapers	68	66	19	27	180	2.97	Accepted
6	Online Tutorials	51	66	25	38	180	2.72	Accepted
7	Search Engines	61	71	20	28	180	2.92	Accepted
8	Access to Global Online Research in Agriculture	38	82	32	28	180	2.72	Accepted
9	Online Access to Research Environment	47	79	31	23	180	2.83	Accepted
10	Directory of Open Access Journals	37	79	32	32	180	2.67	Accepted
11	Dictionary of Open Access Book	47	68	28	37	180	2.69	Accepted
12	Journal Storage	36	79	23	42	180	2.60	Accepted
13	Weblogs	57	67	20	36	180	2.81	Accepted
14	Online Access to Digital Resources	47	87	36	10	180	2.95	Accepted
15	Institutional Repository (IR)	51	58	31	40	180	2.67	Accepted

Source: Field trip 2019. Key: HA=Highly available; A=Available; LE=Less Available; NA= Not Available

Table 1 above shows general average availability (2.5-2.99) of internet resources for students with all mean scores quite above 2.5. The online newspaper has the highest mean score of 2.97 followed by online access to digital resources (2.95) while JSTOR- journal storage has the lowest mean score of 2.60. This implies that online newspaper is much more available and easily accessible to students than JSTOR. Moreover, students are probably more inclined to online newspaper than the JSTOR.

Table 2: Sources of internet resource usage for learning and research among study participants

S/N	Internet Resources	VHE	HE	LE	VLE	TOTAL	$\bar{x}$	DECISION
1	Laptops	129	37	8	6	180	3.61	Accepted
2	Smartphones	134	34	7	5	180	3.65	Accepted
3	University library	82	65	27	6	180	3.24	Accepted
4	Faculty library	53	49	59	19	180	2.76	Accepted
5	Cyber cafes/ internet centers	69	73	28	10	180	3.12	Accepted
6	Home internet connectivity	59	59	37	25	180	2.84	Accepted

Source: Field trip 2019. Key: VHE=Very High Extent; HE=High Extent; LE=Less Extent; VLE=Very Less Extent

Table 2 above also shows a high availability of the sources of internet resources usage with the majority of the sources having mean scores above 3.0. Smartphones had the highest mean score of 3.65 while faculty library has the lowest mean score of 2.76. Smartphones are heavily used by students more than other sources because they are always handy and more convenient in searching for locations where there is internet connectivity while internet may be largely unavailable in the faculty library.

Table 3: Purpose for the use of internet resources for research

S/N	Item Statement	SA	A	D	SD	TOTAL	$\bar{x}$	DECISION
1	For research purposes	137	38	1	4	180	3.71	Accepted
2	For writing assignments and term papers	127	50	1	2	180	3.84	Accepted
3	Formulation of research objectives and questions	87	75	13	5	180	3.36	Accepted
4	Articulating statements of research problem	94	60	19	7	180	3.34	Accepted
5	For acquiring knowledge related to theoretical frameworks	78	88	9	5	180	3.33	Accepted
6	To examine relevant empirical studies	85	78	14	3	180	3.36	Accepted
7	Equip one in the knowledge of proper data collection and analysis procedure	90	71	9	10	180	3.34	Accepted
8	It assists me to check current information services	110	56	8	6	180	3.50	Accepted
9	It helps me in interacting with my lecturers	68	70	23	19	180	3.04	Accepted
10	It helps me in checking the correctness of references and citations	85	74	17	4	180	3.33	Accepted
11	It helps in organizing my research work	99	71	5	5	180	3.47	Accepted
12	It helps me in the presentation of my research output	91	70	8	11	180	3.34	Accepted

Source: Field trip 2019. Key: SA=Strongly Agree; A=Agree; D=Disagree; Strongly Disagree

Table 3 shows an overwhelming agreement to the respondent's purpose of using internet resources with all mean scores quite above 3.0. Using the internet for writing assignments and term papers has the highest mean score of 3.84 while use for interacting with lecturers has the lowest mean score of 3.04. Of course, the major driving force for online educational activities is the internet which is reflected mostly in sourcing for information for research writing assignments and term papers.

Table 4: Purpose of using Internet Resources for Learning

S/N	Item Statement	SA	A	D	SD	TOTAL	$\bar{x}$	DECISION
1	For learning business and entrepreneurship ideas	110	51	12	7	180	3.45	Accepted
2	It helps in learning the meaning of new words	75	91	8	6	180	3.31	Accepted
3	It helps in learning emailing system	92	53	26	9	180	3.27	Accepted
4	It assists in learning graphic designs	82	77	10	11	180	3.28	Accepted
5	For learning data analysis	92	57	14	17	180	3.24	Accepted
6	For writing term papers assignments	116	40	141	10	180	3.46	Accepted
7	For writing assignments	114	52	9	5	180	3.53	Accepted
8	Online course registration	121	44	8	7	180	3.55	Accepted
9	Learning about workshops, conferences and seminars	81	71	19	9	180	3.24	Accepted
10	It assists in using search engines	50	90	34	6	180	3.02	Accepted
11	It helps in learning how to use social media platforms	80	77	19	4	180	3.29	Accepted
12	It helps in learning how to transfer files	75	72	32	1	180	3.22	Accepted
13	It assists in learning how to download and share downloaded materials	90	70	13	7	180	3.35	Accepted
14	It assists in learning communication skills	88	73	19	0	180	3.38	Accepted

15	It assists in learning paper presentation skills	87	65	23	5	180	3.3	Accepted
16	It helps in learning current affairs	83	75	18	4	180	3.32	Accepted

Source: Field trip 2019. Key: SA=Strongly Agree; A=Agree; D=Disagree; Strongly Disagree

Table 4 above also indicated that respondents overwhelmingly agree to the purposes for learning using internet sources with all mean scores above 3.0. Using internet sources for online registration has the highest mean score of 3.35, while its assistance in the use of search engines has the lowest mean score of 3.02. Generally, the application of ICT in learning is facilitated by the Internet.

Table 5: Level of Satisfaction with Internet Resources for Learning and Research

S/N	Internet Resources	HS	S	LS	NS	TOTAL	$\bar{x}$	DECISION
1	Electronic Books	87	43	17	33	180	3.02	Accepted
2	Electronic Reference materials	51	86	20	23	180	2.92	Accepted
3	Electronic Journals	63	68	25	24	180	2.94	Accepted
4	Electronic Thesis and Dissertations	51	76	26	27	180	2.84	Accepted
5	Online Newspapers	60	74	26	27	180	2.96	Accepted
6	Online Tutorials	53	75	20	32	180	2.83	Accepted
7	Search Engines	54	64	38	24	180	2.82	Accepted
8	Access to Global Online Research in Agriculture	57	67	37	19	180	2.9	Accepted
9	Online Access to Research Environment	50	82	28	20	180	2.9	Accepted
10	Directory of Open Access Journals	50	75	36	19	180	2.87	Accepted
11	Dictionary of Open Access Book	58	63	39	20	180	2.88	Accepted
12	Journal Storage	50	65	44	21	180	2.8	Accepted
13	Weblogs	50	67	42	21	180	2.81	Accepted
14	Online Access to Digital Resources	35	85	38	22	180	2.74	Accepted
15	Institutional Repository (IR)	44	58	44	34	180	2.62	Accepted

Source: Field trip 2019. Key: HS=Highly Satisfied; S=Satisfied; Less Satisfied; NS=Not Satisfied

Table 5 reveals that a high level of satisfaction is derived by respondents on the use of internet resources for research and learning. Highest satisfaction is derived from the use of electronic books with a mean score of 3.02. Institutional repository on the other hand has the lowest mean score of 2.62.

Table 6: Challenges associated with the Use of Internet Resources for learning and research

S/N	STATEMENT	SA	A	D	SD	TOTAL	$\bar{x}$	DECISION
1	Lack of browsing skills	104	44	18	14	180	3.32	Accepted
2	Insufficient ICT infrastructures	81	69	20	10	180	3.23	Accepted
3	Poor knowledge of search strategy	72	78	21	9	180	3.18	Accepted
4	Complexity of online resources	55	92	24	9	180	3.07	Accepted
5	High subscription cost	78	62	27	13	180	3.14	Accepted
6	High downloading/printing cost	82	55	31	12	180	3.15	Accepted
7	Unstable power supply	92	60	18	10	180	3.3	Accepted
8	Low internet bandwidth	78	68	26	8	180	3.2	Accepted
9	Lack of time for browsing	83	51	31	15	180	3.12	Accepted
10	Online resources not relevant	69	67	25	19	180	3.03	Accepted
11	Too many online databases	65	58	44	13	180	2.97	Accepted
12	Uncooperative attitudes of library staff	52	67	36	25	180	2.81	Accepted

Source: Field trip 2019. Key: SA=Strongly Agree; A=Agree; D=Disagree; Strongly Disagree

Table 6 above presents a high level of agreement on the challenges associated with using internet resources for learning and research. The highest challenge is lack of browsing skills with mean score

3.32 followed by unstable power supply 3.3 and low internet bandwidth with mean score 3.2. Moreover, challenge with the lowest mean score is uncooperative attitude of library staff with mean score 2.81.

Table 7: Strategies for enhancing the use of Internet Resources for learning and research

S/N	STATEMENT	SA	A	D	SA	TOTAL	$\bar{x}$	DECISION
1	Internet resources should be properly classified	137	31	5	7	180	3.66	Accepted
2	Awareness on available information resources	100	62	7	11	180	3.3	Accepted
3	Proper orientation on online services	102	61	12	5	180	3.44	Accepted
4	Adequate computer facilities to access internet resources	95	69	10	6	180	3.40	Accepted
5	Up-to-date information materials	80	70	14	16	180	3.19	Accepted
6	Constant power supply	92	50	32	6	180	3.27	Accepted
7	Strong internet access	84	63	24	9	180	3.23	Accepted
8	high-quality infrastructure	86	62	23	9	180	3.25	Accepted
9	Users adequate skills in retrieving needed information	84	71	16	9	180	3.28	Accepted
10	Accessibility to electronic resources	67	70	28	15	180	3.08	Accepted

Source: Field trip 2019

In Table 7, there is a general agreement to the strategies for enhancing the use of internet resources for learning and research. The mean responses to the items in the table ranged from 3.08 to 3.66. This result shows that if adopted, these strategies would enable undergraduate students to be more aware of internet resources and maximize their usage.

DISCUSSION OF FINDINGS

Availability of Internet resources for learning and research for undergraduate students

The findings revealed that internet resources are highly available to undergraduate students in the Faculty of Education, University of Nigeria, Nsukka for learning and research. These resources include electronic books, electronic reference materials, electronic journals, electronic thesis and dissertations, online newspapers, online tutorials, Access to Global Online Research in Agriculture (AGORA), Online Access to Research Environment (OARE), Directory of Open Access Journals (DOAJ), Directory of Open Access Books (DOAB), Journal Storage (JSTOR), weblogs, online access to digital resources and Institutional Repository (IR).

The findings of the present study are consistent with Ukpebor's (2011) study which indicated that the information available on the internet has proved to be a great asset for the students. With these results, students have a wide availability of sources to keep abreast of the latest information in their fields of study, which is vital for improving their professional experience. The respondents also accepted that with the availability of instant access to the latest information on the internet, learning and research processes can always be facilitated. In a survey-based study by Lefuna (2017) on access to and use of electronic information resources in academic libraries of the Lesotho Library Consortium (LELICO), it was found that e-resources such as e-mail, search engines, websites, Online Public Access Catalogue (OPAC), e-journals, full-text databases, reference databases, institutional repositories (IRs) and Compact Disc-Read Only Memories (CD-ROMs) were also accessed and used for both learning and research. The finding reinforces Schmidt (2003), who remarked that the availability of information in electronic format is a welcome development by publishers, museums and archives.

Sources of Use of Internet Resources for Learning and Research

These sources of use include laptops, smartphones, university library, faculty library, cybercafés, internet centers and home internet connectivity. The highest use recorded for smartphones and laptops might be as a result of their capacity for quick and easy access to information through the use of data where there is little or no internet connectivity. These findings are consistent with those of (Amankwah2014) who conducted a study on the use of electronic resources by undergraduate students of Ghana Institute of Management and Public Administration (GIMPA). Amankwah also found that a lot of students access electronic resources both within and off-campus using laptops, iPad, desktop computers, and mobile phones. The findings of the present study imply that all students need the electronic resources to complete assignments, write project work, update lessons notes, carry out research, as well as access up-to-date information in their different fields of study. This finding also corroborates those of (Anaraki and Babalhavaeji2013) by identifying the positive effects of smartphone usage for education to include easy access to information, instructional usage and personal convenience. In support, (Kumbhar and Pawar2014) claimed that mobile technologies have introduced a "libraries in hand" trend. They suggest that since libraries are currently creating digital contents accessible on computers, such digital collections could be made available on mobile platforms. Although many students use these sources to their disadvantage by engaging so much in social activities more than education, teachers have continued to advice against it.

Undergraduate students' purpose of using Internet Resources for Research

The findings of the study on the purpose of using internet resources for research include writing assignments and term papers, for general research purposes, formulation of research objectives and questions, articulating statements of research problem, acquiring knowledge of the theoretical frameworks, improving capacity to examine relevant empirical studies, promoting knowledge of proper data collection and analysis procedure. It enables students to check current information services, interact with lectures through emails, check the correctness of references and citations, organize research work for submission and presentation. The majority of the respondents believe that the most important use of internet resource is writing assignments and term papers. In agreement with this finding, (Badu and Markwei2005) opined that there is a gamut of internet resources available for student's learning, assignments and research work in both open and closed-access databases. (Mashra, Yadav, and Bisht2005) conducted a study on internet utilization pattern of undergraduate students in the College of Agriculture and Technology, Pantnagar India. The findings showed that 61.5% of male respondents and 51.6% of female respondents used the internet to prepare assignments. In the same vein, (Kumar and Kaur2006) studied internet and its use in the engineering colleges of Punjab, India, among 474 students using the Questionnaire. The study revealed that 30.8% of the students have 2-4 years of experience in using the internet in the colleges and use the internet for education and research purposes, while half of them use it for communication purposes. It is noteworthy that all the purposes for which students use internet resources for learning is important.

Undergraduate students' purpose of using Internet Resources in learning activities

The findings on the students' purpose of using internet resources for learning and research in the Faculty of Education, UNN include; learning of business and entrepreneurship ideas, the meaning of new words, email systems, graphic designs, online course registration, learning about workshops, conferences and seminars on how to use social media platform, writing term papers and assignments, how to download and share downloaded materials, communication skills, paper presentation skills, learning about current affairs and how to use search engines. This agrees with the study conducted by (Sinha2004) which found that the internet is adequately and increasingly being used for educational course delivery. In the same vein, a comparative study carried out by (SaeedAlshahran, Ejaz and Rupert 2017) on the impact of students' use of online resources for study purposes and their relationship with their lecturers in higher education in three countries;(United Kingdom, Saudi Arabia and Kenya) showed that the internet as an information provider has improved students' academic self-confidence (LOI 5.41–5.66 and POI 83–90%) and academic self-reliance (LOI 4.74–5.24 and POI 66–79%). Students have become more self-reliant when searching information online. The World Wide Web (WWW) as a method of communication has also improved student–lecturer connectedness. It enables students to communicate more easily with lecturers without face-to-face contact. (Okuogo2006) also points out that internet-

learning offer less expensive, more convenient and a richer way of becoming educated through having contact with more diverse groups of fellow students than ever before. The above finding is also in agreement with that of (Ngulube, Shezi and Leach 2009) who observed that the internet offers educational benefits ranging from easy access to up-to-date resources, ease of communication between teachers and students without limitation in time, distance and space geared towards improving the research and learning experience of students.

Users' Level of satisfaction with Internet Resources for Learning and Research

The findings revealed a high level of satisfaction with all the internet resources for learning and research among the respondents. These resources include electronic-books, electronic-reference materials, electronic-journals, electronic thesis and dissertations, online newspapers, online tutorials, Access to Global Online Research in Agriculture, (AGORA), OnlineAccess to Research Environment (OARE), Directory of Open Access Journals (DOAJ), Directory of Open Access Books (DOAB), Journal Storage (JSTOR), weblogs, online access to digital resources and Institutional Repository (IR). The highest level of satisfaction was derived from e-books and journals which might be because they are believed to be more authentic and useful for student's learning and research. This finding is corroborated by (Hamid et al.'s. 2015) study which found that in other countries like Australian and Malaysian, internet utilization helped students in sharing of materials for group research projects and this, in turn, improved their self-directed learning.

Challenges of using Internet Resources for Learning and Research

The results revealed a lack of search skills, insufficient ICT infrastructures, poor internet services and erratic power supply as major challenges. Many students agreed not to have undergone any official training on learning and research using internet resources. Rather, they got the little knowledge they had during the orientation exercise and through friends. Moreover, difficulty in finding relevant information from too many databases, high cost of subscription, high downloading/printing cost and uncooperative attitudes of library staff also pose some challenges. These findings are consistent with those of (Amankwa2014) who investigated the use of electronic resources by undergraduate students of Ghana Institute of Management and Public Administration (GIMPA) and discovered that students were fully aware of the electronic resources available to them but do not maximize their use of these resources to enhance learning and research due to poor information and literacy skills. The findings of the present study also agrees with (Okello-Obura& Magara 2008) who observed that in order to make use of the growing range of internet resources, students must acquire and practice the necessary skills to exploit them. Although librarians teach information literacy skills as part of a general studies programme (GSP 111, a course undertaken by all the students of the University of Nigeria) the large number of students in one class hinders proper understanding. This is even worsened by the poor power supply in the University. Most information centers and libraries rely on alternative sources of electricity such as power generating machines to function. The effect has been the provision of epileptic services. (Lefuna2017) in his study on access to and use of electronic information resources in academic libraries of the Lesotho Library Consortium (LELICO) revealed that challenges such as budget cuts, low internet bandwidth, lack of up-to-date IT infrastructure, inadequate searching skills, shortage of staff and high cost of subscription fees posed many of the threats to access to and use of e-resources in the institutions libraries. According to Lefuna, some of these challenges are hinged on the lack of guidelines and e-resources collection development policies. These challenges can constitute a significant source of barrier to students making adequate use of internet resources for learning and research.

Strategies for Enhancing the Use of Internet Resources for Learning and Research

The results identified proper orientation and regular training of students on information literacy skills including search skills for easy and information retrieval, critical thinking for evaluation of resources, online services and up-to-date information materials. Increased funding allocation to the library is required to ensure constant power supply, strong internet access and high-quality infrastructure for students' use and for adequate teaching. On its part, the library should maintain a proper classification of internet resources and awareness on available information resources. These findings are in line with

(Okello-Obura and Magara2008) who stated that, to acquire network literacy, users should have basic computer literacy (knowing how to operate computers, which are the interfaces between network information and end-users, media literacy (understanding the different media for storing network information and know how to use them) and information literacy (knowing how to locate, evaluate and use information effectively). Lefuna (2017) in a study on access to and use of electronic information resources in academic libraries of the Lesotho Library Consortium (LELICO) indicated that awareness of e-resources was mainly through formal engagement, such as library orientation and through informal engagement such as colleagues. The following strategies were in place: IRs, Open Access (OA), Information Literacy (IL) programme as well as library orientation sessions to improve students' knowledge of access to and use of e-resources.

The Future from the foreground

Undergraduate students undoubtedly require internet resources to improve their learning and research experience. While these resources are readily but not highly available for use, students possess various sources or means of accessing these resources such as personal computers, smartphones and library gadgets. However, many underlying constraints hinder easy access to these resources. Most prominent include low information literacy skills among the students, inadequate ICT infrastructure, poor internet bandwidth and inadequate power supply. There is therefore a compelling need for regular training of students on information literacy skills such as information search, information retrieval and evaluation to enable students maximize the availability, ease of use, flexibility of internet resources to access information relevant for improving their learning and research experience. Moreover, regular training can only be effective and beneficial by providing adequate internet bandwidth, power supply and ICT facilities in the university and faculties at large to facilitate access to information resources. In a world where learning and research resources have migrated to a predominantly electronic environment, the quantum of these resources available to students in developing countries must cross the average threshold. It is equally critical that mere possession of access tools does not translate to skills that are required to maximise access and utilisation of internet resources for students' learning and research experiences. The foreground is a positive picture of improvements on the availability, access and use of internet resources by students for learning and research. The future compels a paradigm shift that will catalyse students' maximisation of the tripod issues of availability, access and utilisation of internet resources for students' learning and research experiences. The bottom line is that navigating new information ecosystem requires new information literacy and technical skills by potential natives or immigrants to the new information environment. The implication for information development in higher education in developing countries is that enabling infrastructure such as regular power supply, adequate internet bandwidth and computing systems and facilities are foundational to the maximum use and access to internet resources for learning and research by students. They must be sufficiently available and optimally functional. Furthermore, information institutions must focus on the development of the functional information literacy skills of students since availability of internet resources and access tools do not translate to effective use of internet resources for learning and research. The ultimate goal is the maximization of students' learning and research experiences in the now, almost indispensable internet environment.

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