Information Searching Skills and Use of Digital Library Resources for Learning Among Undergraduate Students of Universities in Yobe State, Nigeria

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Abstract
The paper investigated information searching skills and use of digital library resources for learning among undergraduate students of universities in Yobe State, Nigeria. The 14,141 undergraduate students enrolled in the universities made up the study's targeted group. Using a proportionate stratified random sampling procedure, 384 respondents were included in the sample. A questionnaire was employed as the primary data collection tool, and both descriptive and inferential statistics were used to analyse the results. The findings of the study revealed that despite having some informal Internet skills, the research subjects' information searching skills were found to be inadequate. The results of the study showed that the respondents lacked formal information searching skills and strategic Internet skills. Furthermore, the results showed that the only digital library resources being used were e-journals, e-books, e-newspapers, and online dictionaries. Other crucial resources, such as e-databases, e-projects, e-theses, and e-dissertations, were not being used to their best advantage. Consequently, the study suggested that the management of libraries should implement digital literacy initiatives and teach students about the value of utilising a variety of digital resources found in libraries to support their learning objectives. In a similar vein, the managements ought to create workshops and training courses for students in digital literacy. Basically, the priorities should be raising awareness and providing tutorials and primers.

Keywords: Information Searching Skills, Use, Digital Library Resources, Undergraduate

Introduction

The previous few decades have seen an incredible digital revolution take place in the world. Human lives are impacted by technology in a variety of ways. Both libraries and library users are impacted by this. The digitisation of books, the growth of academic databases, the expansion of online reference resources and services, and the automation of libraries are only a few significant areas where the digital transformation of libraries is having an impact. Many digital library resources (DLRs) are being used for teaching and learning purposes as a result of the digital transformation. The benefits of remote access, ease of manipulation, and

convenience drive this utilisation. On the other hand, in order to utilise the resources of the digital library, a few specific abilities are needed, such as proficiency with computers, synthesis, assessment and utilisation, and information searching skills (henceforth, ISS) (Khoo, 2019).

Cerretani, Iturriozm, and Garay (2016) defined information searching skills as all the actions taken in the process of determining the information that is required from a variety of information sources and assessing the resources to meet the information need. Similarly, Adeleke and Emeahara (2016) noted that in the twenty-first century, one's ability to effectively access and utilise pertinent digital information resources is primarily determined by their proficiency with various ISS strategies. Okocha and Owolabi (2020) have pointed out that a person's research requirements increase in complexity when they become an ISS member. It makes sense that ISS is more complicated than simply typing a term into a search engine or library database to obtain all the necessary information resources. Therefore, it is essential that people learn the skills necessary to investigate the ever-growing pool of knowledge. Consequently, mastering ISS will enable undergraduate students to find and make use of pertinent digital library resources including databases and search engines.

The advantages and needs of ISS for undergraduate students have long been recognised by numerous academics. For instance, Job and Nwokedi (2020) claimed that to satiate their informational thirst, students want ISS in order to explore computer-based systems like the OPAC and the World Wide Web. Furthermore, Khoo (2019) stated that ISS is a benchmark for achieving both professional and personal growth since it measures the amount of knowledge that undergraduate students have learnt during their studies. Furthermore, Yebowaah and Plockey (2017) noted that undergraduate students would rather browse and use the internet resources for their information needs than go to the library and conduct manual searches for information. Libraries no longer only keep printed materials like books, periodicals, and journals in their repositories; they now have access to online resources and other DLRs.

Research on the Information Searching Skills (ISS) and undergraduate students' usage of DLRs has become widespread. According to some of these studies (Okocha and Owolabi, 2020; Thindwa, Chawingra & Dube, 2019; Scoulas & De Groote, 2019; Reddy, Krishnamurthy & Asundi, 2018; Mizrachi, Boustany, Kurbanoğlu & Doğan, 2016; Kadli & Hanchinal, 2015), undergraduate students' access to and use of DLRs has been hindered due to subpar and partially non-effective ISS. However, some academics have argued that in order to fully comprehend the problems related to the ISS and the usage of DLRs, more thorough study and studies are necessary (Gkorezis, Kostagiolas & Niakas, 2017). Furthermore, El-Maamiry (2017) contended that the need for broader research stems from the fact that ISS differs throughout disciplines.

Considering the aforementioned situations, additional research is still needed to comprehend ISS dynamics and undergraduate students' use of DLRs in various contexts. Thus, this study examined undergraduate students' usage of digital library resources for learning and their information-searching skills in universities

in Yobe State, Nigeria. Federal University Gashua and Yobe State University Damaturu were these universities.

The Yobe State University Damaturu was founded in 2006. It is located in Damaturu town, the capital of Yobe State. The university currently has a population of 9,843 undergraduate students spread in five faculties. The university library has a setting capacity for 400 users at a time. The digital section of the library has 250 computers and makes available electronic databases to users that included EBSCOhost, Science Direct, E-granary, Alexandria, and other offline databases. The Federal University Gashua was established in 2013. The university presently has a population of 4,300 undergraduate students. The university has 5 faculties and 23 undergraduate programmers. The university library has a setting capacity for 300-500 readers at a time. The digital section of the library is equipped with about 100 computers. The digital library makes available subscribed databases to users. These databases include J-stor, Caliber, Ebscohost, and Science Direct.

Problem Setting

Technology advancements have increased the value of digital library resources. Students, scholars, and other information searchers can now access and utilise library resources remotely thanks to technological advancements. Like many other university libraries throughout the world, university libraries in Yobe State have been heavily investing in DLRs acquisition and purchase as well as upkeep of online database subscriptions to enhance the educational process. In a similar vein, the institutions are running several initiatives to promote undergraduate students' usage of digital library resources and to assist their learning. These programs include computer literacy assistance, orientation activities, library instructions, and user education.

However, data records and firsthand observation have shown that there is little DLRs usage among undergraduate students in the study area, even though the two universities under investigation had DLRs and ISS programs available. As a result, this investigation posed the following question: What relationship exists between undergraduate students' utilisation of digital library resources for learning in Yobe State, Nigerian universities and their information searching skills? However, prior studies conducted globally have recognised that undergraduate students generally have low ISS, which inevitably affects their capacity to utilise digital library resources. Nevertheless, previous researches have not included universities in Yobe State, thus nothing is known about undergraduate students' opinions of ISS and DLRs use. Therefore, this study is embarked to fill this knowledge gap.

Research Objectives

The study is set:

1. To examine the current digital library resources use for learning by undergraduate students in universities in Yobe State.
2. To determine the information searching skills use for learning by undergraduate students in universities in Yobe State.

Research Hypotheses

$H0_1$: There is no significant relationship between information searching skills and use of digital library resources for learning by undergraduate students in universities in Yobe State.

Literature Review

Digital Library Resources Use for Learning by Undergraduate Students

Digital information resources that must be accessed via a computer or other electronic device that offers a collection of data—whether in full-text, databases, e-journals, picture collections, multimedia and media-based products, OPAC, and other computer networks—are commonly referred to as digital library resources (Ramzan, Asif, & Ahamad, 2021; Saklani, 2020; Sreekumar, 2020; Kwafoa, Anhwee & Manu, 2019). Information in a format that can be accessed using a computer or other device that requires an Internet connection is often the definition of digital library resources (Anyim, 2018). According to Sejane (2017), portals, news, and other media sources, along with visual assets, make up digital library resources. Additionally, digital libraries, virtual libraries, open access repositories, federated search, virtual reference, and digital institutional repositories are significant types of digital information resources (Jonathan & Udo, 2015).

Research in the field of information science has demonstrated that undergraduate students at universities use a variety of digital library resources for educational reasons. These digital library resources include multimedia, image-based products, audio-visual materials, e-books, e-journals, e-theses, e-newspapers, e-databases, and multimedia (David-West, 2022; Mukhtar & Maidabino, 2012; Saklani, 2020; Anhwere & Manu; 2020; Akuffo & Badu, 2019; Siwach & Malik, 2019). Undergraduate students also utilise the Google search engine for learning (Okocha & Owolabi 2020). According to the authors, the Google search engine is widely utilised because of its transparency and dependability. Furthermore, empirical research has shown that undergraduate students use a variety of offline and online resources. For instance, Siwach and Malik (2019) provide an empirical study on how undergraduate students, faculty members and researchers in selected North Indian colleges use digital information resources. The study reveals that Springer Link, Science Direct, Web of Science, and SciFinder Scholar are among the databases that undergraduate students utilise the most.

However, numerous studies have found that undergraduate students at universities are not making the most use of digital library resources, and this is a prevalent issue in both developed and developing nations. 42 percent of respondents to a study by Amaya and Secker (2016) in the United Kingdom said they preferred accessing print library resources over electronic ones. In a related study on the "academic reading format of students around the world," conducted in the United States and the United Kingdom, Mizrachi et al. (2016) discovered that students strongly prefer print information resources over digital library resources. According to a study by Mizrachi et al., 67.7% of research participants prefer to look for information in print over digital media. Pesut and Zivkovic (2016) found that 82

percent of participants in another empirical study done in Croatia preferred using print information resources over digital ones.

Studies conducted in various developing nations, including Tanzania, Ghana, Oman, India, and Israel, have also revealed that undergraduate students have a stronger preference for print information resources compared to digital library resources (Hamshri, 2019; Siwach & Malik, 2019; Aharony, & Bar-llan, 2018). The aforementioned situations were also noted in Nigeria. According to a study by Yakubu (2018), undergraduate students at two universities in Niger State visited and used printed books in the libraries more frequently than they did electronic information resources. In light of this, comprehending how undergraduate students use digital library resources for learning is a crucial component that requires more thought from researchers, as this study does.

Information Searching Skill for Learning among Undergraduate Students

The ability to search for information is one facet of "digital literacy." The American Library Association (ALA), (2018) defines digital literacy as the "ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills." The ability to use technological tools like computers, the Internet, Smartphone, eReaders, and other mobile devices is a prerequisite for being considered digitally literate. Basic digital abilities necessitate the possession of basic skills such as typing, internet literacy, the capacity to access multimedia resources like audio and video files, and the ability to complete tasks using social media and mobile devices. Professional skills that contribute to proficiency are necessary in addition to the fundamentals. Functional skills, collaboration skills, critical thinking and assessment skills, and the capacity to locate and select information are a few examples of these skills (Panduwinata & Setiawata, 2024; Teacher Registration Council of Nigeria, (TRCN), 2021).

Information searching skills are necessary for students to locate and select information efficiently. Lack of or insufficient digital information literacy will woefully affect students' ability to critically process the vast amount of information available in the digital space (Mrah, 2014). According to theoretical viewpoints, an individual's information behaviour, information seeking behaviour, and information searching behaviour are all related (Tariq, Mahmood, Ur Rehman, & Mustafa, 2018). Similar to this, Leckie's (1996) Information Seeking Professional Model hypothesised that information searching skills influence the use of information sources. Numerous academics have examined students' information-searching skills and how they relate to the use of digital information resources from an empirical perspective. Panduwinata and Setiawata (2024) have reported that digital literacy has a significant influence on critical thinking skills. Nonetheless, it's interesting to note that results from earlier studies have shown inconsistent outcomes from various regions of the world. Studies (Thindwa, Chawinga, & Dube, 2019; Ezra, Paul, & Peter, 2018; Lefuna, 2017; Adeleke & Nwalo, 2017), for instance, have recognised that students' information-searching skills were insufficient. In a similar vein, students' information searching skills are generally good, according to a study

by Adebayo, Michael, and Akole (2017) on the "Information Searching Skills of Medical Students of College of Medicine University of Ibadan, Nigeria." In a similar vein, Tariq et al. (2018) examined the undergraduate, graduate, and postgraduate online information searching (OIS) skills of business students in Lahore, Pakistan. The study discovered that students' skills to find information were at a satisfactory level. Furthermore, Nsirim (2020) studied how Rivers State University undergraduate students use the library, their information needs, and their information-searching techniques. The study's findings indicated that most respondents had fair information-searching skills. To this end, this study attempts to understand the information searching skills of undergraduate students in universities in Yobe State, Nigeria, with the hope of contributing to the nuanced discussions in the area. This is due to the wide disparity in information searching skills among undergraduate students in different fields and countries.

Methods

The study used a survey research design with a quantitative research methodology. 14,141 undergraduate students from Federal University Gashua and Yobe State University Damaturu are the target population. Proportionate stratified random sampling techniques were employed to choose the study sample in order to guide the investigation. A self-administered questionnaire was used to collect the data, which were then analysed using descriptive and inferential statistics.

Validity and reliability tests were carried out to guarantee accurate measurement as well as the stability and consistency of the questionnaire. A questionnaire for the face and content validity test was distributed to experts in several categories. Conversely, the Cronbach Alpha Coefficient was used to guarantee the dependability test. 3.0 were chosen as the midpoint of the mean value for statistical decision-making. A mean score of more than 3.00 denoted agreement, whereas a score of less than 3.0 denoted disagreement.

Results

The targeted respondents in the study received a total of 384 copies questionnaires from the researcher. A total of 324 questionnaires were properly completed and returned, which makes 82.5% response rate.

RQ 1: What types of Digital Library Resources is use for Learning by Undergraduate Students?

Table: 1 Types of digital library resources use by the respondents

	NU		AN		Occasionally		AE		FU		Mean	STD
Items	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**		
E-journal articles	27	8.3	81	25.0	54	16.7	108	33.3	54	16.7	3.25	1.24
E-books	54	16.7	81	25.0	0	0	135	41.7	54	16.7	3.17	1.41

E-databases	81	25.0	108	33.3	27	8.3	108	33.3	0	0	2.50	1.19
E-projects	27	8.3	162	50.0	54	16.7	81	25.0	0	0	2.58	.96
E-theses & Dissertations	54	16.7	108	33.3	54	16.7	81	25.0	27	8.3	2.75	1.24
E-Newspaper	27	8.3	54	16.7	27	8.3	135	41.7	81	25.0	3.58	1.26
E-Magazines	135	41.7	162	50.0	0	0	27	8.3	0	0	1.75	1.01
E-conference	162	50.0	135	41.7	0	0	27	8.3	0	0	1.75	1.01
Online dictionaries	81	25.0	54	16.7	27	8.3	54	16.7	108	33.3	3.17	1.62
Online encyclopaedia	108	33.3	135	41.7	27	8.3	54	16.7	0	0	1.75	1.01
Online maps and atlases	81	25.0	108	33.3	27	8.3	108	33.3	0	0	2.50	1.19
Online abstracts and indexes	108	33.3	135	41.7	0	0	54	16.7	27	8.3	1.67	1.02
										Grand mean	**2.53**	

NU= Never use 1; **AN**= Almost never 2; **O**= Occasionally 3; **AE**= Almost every time 4; **FU**= frequently use 5; **STD**= Standard deviation, **F**= Frequency

When asked if they use digital library resources for learning, as Table 1 illustrates, respondents said they do so for e-journal articles (Mean=3.25), e-books (Mean=3.17), e-newspapers (Mean=3.58), and online dictionaries (Mean=3.17), in that order. Based on the results, it can be concluded that the majority of respondents agreed to use these resources practically always. Additionally, the majority of respondents acknowledged that they occasionally utilise these digital library resources for learning, according to the results for e-theses and dissertations with (Mean=2.75), e-projects with (Mean=2.58), e-databases, and online maps and atlases (Mean=2.50, respectively). On the other hand, a concerning outcome is linked to the utilisation of electronic periodicals, electronic conference proceedings, and online encyclopedias with (Mean=1.75 correspondingly) and online abstracts.

The findings showed that the majority of respondents hardly ever used these online learning resources from digital libraries. The respondents do not regularly use the digital library resources for learning, according to the (cumulative mean=2.53). This finding implies that in order to guarantee that undergraduate students regularly use digital library resources for studying; greater awareness and training are required.

RQ 2: What is the Information Searching skills use for Learning by the Undergraduate Students?

The respondents' information searching skills varied somewhat (Table 2). While the majority of respondents disagreed with the notion that they have operational searching skills, the majority did say that they can open websites (Mean=3.25), navigate pages (Mean=3.08), open file formats (Mean=3.25), and changing browsers (Mean=3.00). It was evident that there were serious issues when looking at strategic internet skills for utilizing DLRs. The majority of respondents disagreed with all five of the required responses, with mean deviations falling below the 3.00 agreement level, suggesting a lack of these skills. The vast majority of respondents acknowledged that they lacked formal searching skills, with the mean deviation of all the items clustered below 3.00.

In addition, the outcomes for non-formal seeking abilities were really encouraging. The majority of respondents concurred that they can choose a website or search system to seek information (Mean = 3.58), formulate and define search options or queries (Mean = 3.17), and use a website or search system to find information. On the statement "I can evaluate web information sources," however, a larger portion of the respondents expressed dissatisfaction (Mean = 2.83). A judgment (Mean=2.83) unequivocally demonstrates that a higher proportion of the undergraduate students concurred that they lack the information-searching skills required to make advantage of digital library resources. These results suggest that the undergraduate students in the study area require greater instruction in digital skills.

Table 2: Respondents' perceptions on information searching skills use for learning

Items	SD		D		UD		A		SA		Mean	STD
	F	%	F	%	F	%	F	%	F	%		
Operational Searching skills on the Use of Digital Resources												
I can open websites by entering the URL in the browser's location bar	27	8.3	81	25.0	54	16.7	108	33.3	54	16.7	3.25	1.24

I can navigate forward and backward between pages using the browser buttons	54	16.7	81	25.0	27	8.3	108	33.3	54	16.7	3.08	1.38
I can open various common file formats (e.g., PDF)	54	16.7	54	16.7	54	16.7	81	25.0	81	25.0	3.25	1.24
I can bookmark websites	108	33.3	81	25.0	27	8.3	54	16.7	54	16.7	2.58	1.50
I can change the browser's preferences	81	25.0	81	25.0	81	25.0	81	25.0	81	25.0	3.00	1.58
Strategic Internet Skills												
I am aware of the opportunities that the web offers and I take advantage of these opportunities for a particular personal or professional goal	108	33.3	81	25.0	27	8.3	54	16.7	54	16.7	2.58	1.50
I can combine the various possible	54	16.7	135	41.7	27	8.3	54	16.7	54	16.7	2.75	1.36

information sources to achieve the best means for the goal desired												
I can decide on what site am I going to visit, what search engine am I going to use or am I to use a database or not?	108	33.3	81	25.0	27	8.3	81	25.0	27	8.3	2.50	1.39
I gain the benefits (personal, social, professional and or educational) by achieving this goal.	108	33.3	108	33.3	0	0	27	8.3	81	25.0	2.42	1.38
Formal searching skills												
I am able to recognize and click links that are embedded in different formats such as text, images, menus and	81	25.0	108	33.3	27	8.3	108	33.3	0	0	2.50	1.19

website lay-outs												
I do not become disoriented when navigating within a website	27	8.3	162	50.0	54	16.7	81	25.0	0	0	2.58	.96
I do not become disoriented when navigating between websites	54	16.7	108	33.3	54	16.7	81	25.0	27	8.3	2.75	1.24
I do not become disoriented when browsing through and opening search results	81	25.0	135	41.7	0	0	54	16.7	54	16.7	2.58	1.44
Informal Internet Skills												
I can choose a website or a search system to seek information	27	8.3	54	16.7	27	8.3	81	25.0	135	41.7	3.58	1.26
I can formulate and define search options or queries	54	16.7	54	16.7	54	16.7	108	33.3	54	16.7	3.17	1.35
I can select the most	54	16.	81	25.	0	0	13	41.	54	16.	3.17	1.4

relevant results or information (on websites or in search results)		7		0			5	7		7		1
I can evaluate web information sources	27	8.3	135	41.7	27	8.3	81	25.0	54	16.7	2.83	1.52
										Grand mean	**2.83**	

SA= strongly agree **5; A**= Agree 4; **UD**= Undecided 3; **D**= Disagree 2; **SD**= strongly disagree 1; **STD**= Standard deviation

Result of Hypothesis Testing

$H_{1:}$ There is no significant relationship between Information Searching Skills and Use of Digital Libraries Resources

Table 3:
N= Number of responses; SD= Standard deviation; P= Probability value

Variables	N	Mean	SD	P-value
Information searching skills	324	1.83	.898	.666**
Use of digital library resources	324	2.59	.777	

PPMC analysis is applied to the data in order to test this hypothesis. With a 95% confidence level and a 0.05 level of significance, the computed result (p-value) is.666. This finding leads to the conclusion that among undergraduate students in the study area, there is a positive correlation between information seeking skills and use of digital library resources. Consequently, the study's null hypothesis is rejected.

Discussion

a) Use of digital library resources

The study's findings showed that participants almost every time use online dictionaries, e-books, e-journal articles, and e-newspapers. The majority of respondents did not frequently use other digital library resources such as online abstracts and indexes, e-databases, e-theses and e-dissertations, e-magazines, and e-conference proceedings. Instead, they just occasionally employed them. Prior researches (Bamidele et al., 2018; Bala, Bansal & Sharma, 2018; Aladeniyi, 2017; Qasim & Khan, 2015; Tella, Orim, Ibrahim, & Memudu, 2018) have also revealed similar findings, namely that undergraduate students primarily use e-journal articles, e-books, and e-newspapers for learning purposes as opposed to other digital library

resources. Furthermore, our results provide support to the notion that undergraduate students favour using physical library resources over digital ones (Hamshri, 2019; Siwach & Malik, 2019; Aharony & Bar-llan, 2018). These results imply that undergraduate students are not making the most frequent use of digital library resources for learning purposes. Therefore, the management of libraries should concentrate their efforts on using digital library resources. In addition to educating students on the value and necessity of utilising a variety of digital resources found in libraries to meet their learning objectives, management may ensure that programs for digital literacy are in place.

b) Information searching skills

The findings of the study showed that although undergraduate students lack the skills to bookmark websites, they do possess operational searching skills when it comes to using digital library resources. These skills include opening websites by typing the URL into the browser's location bar, using the browser's buttons to navigate between pages, opening common file formats like PDFs, and adjusting browser preferences. Furthermore, the study found that although the respondents had informal Internet skills, they lacked formal information searching and strategic internet skills. This result is consistent with a growing body of prior research (Okocha and Owolabi, 2020; Thindwa, Chawingra & Dube, 2019; Scoulas & De Groote, 2019; Reddy, Krishnamurthy & Asundi, 2018; Mizrachi, Boustany, Kurbanoğlu & Doğan, 2016; Kadli & Hanchinal, 2015) that showed low and poor information searching skills among undergraduate students. The importance of information searching skills has been emphasised. For instance, Panduwinata and Setiawata (2024:609) hold the view that ‘‘student’s digital literacy can aid in collecting, organising, and analysing data, as well as synthesising information from various digital sources’’.

These results indicate that undergraduate students lack information searching skills, which has significant implications for researchers and library management. The management of libraries should create workshops and training programs for students to improve their digital literacy. Basically, the priorities should be raising awareness and providing tutorials and primers. However, to find out what might be impeding undergraduate students' ability to search for information and use digital library resources, researchers in the fields of applications design and digital librarianship should do studies.

Conclusion

This study investigates information searching skills and use of digital library resources for learning by undergraduate students in universities in Yobe State, Nigeria. According to the study, the majority of respondents lacked the necessary skills to navigate and utilise digital library resources. A significant portion of those surveyed concurred that their use of digital library resources was restricted to electronic journals, e-books, e-newspapers, and online dictionaries, with inadequate use of other crucial resources like e-databases, e-projects, e-theses and dissertations, e-magazines, and e-conference proceedings. From the aforementioned, it is

reasonable to infer that undergraduate students' inadequate information-searching skills contribute to their poor usage of digital library resources. The results of this study can therefore be used as a guide by digital librarians, application designers, and library management to create and promote features that will entice library users to use their services and goods.

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