

**ASSESSMENT OF INFORMATION LITERACY SKILLS OF UNDERGRADUATES IN
FEDERAL UNIVERSITIES IN NORTH-CENTRAL, NIGERIA.**

Olabisi Christy **Adeeko** Ph.D
Chief Librarian,
Gateway ICT Polytechnic Saapade, Remo
email: olabisiadeeko@gmail.com
Orcid.org/0000-0002-3156-8729

Basiru **Adetomiwa**, Ph.D
Principal Librarian,
Redeemer's University, Ede, Osun State.
email: tommybashy06@gmail.com
adetomiwat@run.edu.ng
Orcid.org/0000-0002-1374-4979 corresponding author.

Olutoyin Bosede **Akintola**, PhD
Associate Professor/ Deputy Librarian,
Federal University of Abeokuta,
email: akintolabo@funaab.edu.ng
Orcid 0000-0002-1692-5660

Abstract

Information literacy skills are essential for undergraduates as they need to access, evaluate, and use information ethically. The scope of information available is limitless and overabundant due to Internet resources, so undergraduates need to become critical users of information. This study, therefore, assessed the level of information literacy skills of undergraduates in North-central Nigeria. The study adopted a descriptive survey of correlational types. Multistage sampling procedures were used; purposive sampling methods were used to select five conventional federal universities and three homogenous faculties. Two departments common to the faculties were also purposively selected, while five percent of 200 to 400-level undergraduates (797) were selected from a total population of 116, 213. Data were analysed using descriptive statistics. Respondents consisted of males (50.8%) and females (49.2%) majority (52.4%) aged 21-25years. The findings show that the level of the undergraduates' ability to define and articulate information needed (= 2.96), ability to communicate and ethically use information (= 2.97), and ability to assess and evaluate information (= 2.89) across the five universities is relatively high. However, the result indicated that the level of the undergraduates' ability to locate information (= 2.36) and ability to organise information is moderate (= 2.66). The findings revealed that a considerable number of undergraduates across the universities have high levels of information literacy skills. (69.2%).

Information literacy should be integrated into the curriculum to enhance the undergraduates' skills in the ability to locate and organize information.

Keyword: *Information literacy skills, Undergraduates, Federal Universities, North-central, Nigeria*

Introduction

In the face of an information explosion where the information available is limitless, it becomes emergently necessary for undergraduates to learn to use information critically. Accessing and using information is about locating Internet resources and developing the skills needed to seek information from different resources. What is essential is not the information found, but the use of the information to accomplish the assignments or research is of great importance to the undergraduates. Today's web-savvy undergraduates need to make judgments of authority, relevance and accuracy of materials that may not have undergone peer review before being made available on the Internet and which are blindly used by the undergraduates in their assignments and project works (Hadimani and Rajgoli 2010).

According to the Association of College and Research Libraries (2008), information literacy is a set of abilities requiring individuals to recognise when information is needed and have the ability to locate, evaluate, and use effectively the needed information. A set of competency standards further specifies this definition by emphasising five essential skills. A person who is information literate can determine the nature and extent of the information needed, access needed information effectively and efficiently, evaluate information and its sources critically and incorporate selected information into their knowledge base and value, individually or as a member of a group, use information effectively to accomplish a specific purpose and understand many of the economic, legal and social issues surrounding the use of information and accesses and use information ethically and legally.

Wesleyan University (2017) defined information literacy as an essential proficiency in the quest for information. It comprises the capacity to recognise when information is required and competently find, appraise accurately, use efficiently, and understand information in diverse formats. It denotes the capability to steer the fast emergent information setting, which consists of increasing information purveyors and the amount supplied. It contains bulks of professional literature, popular media, libraries, the Internet, and many more. Progressively, information is obtainable in unfiltered formats, putting doubt on the genuineness, cogency, and dependability.

The abundance of information is of minute assistance to those who need more mastery of using it successfully. The importance of information literacy skills is still intangible to most undergraduates. Lack of information literacy skills has compelled some undergraduates to give out their assignments and projects on contracts, while some copy and paste the writings of authors and past projects without due acknowledgement or references. In this phase of limitless information, understanding the various information sources and the need to acquire search skills, appraise, use and communicate information is very important (Sasikala and Dhanraju, 2011).

Undergraduates frequently need help searching and using information effectively, possibly because they are ignorant or have low information literacy skills. Lack of information literacy skills could be the core cause of undergraduates' information search problems and library use. Acquisition of basic and advanced information literacy skills is germane to undergraduates' capacity to search and use information efficiently (Ilogho and Nkika, 2014). In the same vein, Sasikala and Dhanraju (2011) opined that undergraduates overestimate their abilities to access information and library research than they can prove in practice. Some undergraduates could not ascertain when information is required, how to recognise good sources, how to find appropriate information, and how to use and apply it efficiently. Asharafi-rizi, Sajad, Rahmani, Bahrami and Papi (2014) asserted that undergraduates need to use specific skills, such as information literacy skills, to conduct academic research. It is against this background that the researchers assessed the level of information literacy skills of undergraduates in universities in North-central Nigeria.

Objectives of the study

The general objective for this research is to evaluate the level of information literacy skills of undergraduates in federal universities in North-central, Nigeria.

Research questions

1. What is the ability of the undergraduates to define and articulate information needed by the undergraduates?
2. What is the ability of the undergraduates to locate information?
3. What is the ability of the undergraduates to organise information by the undergraduates?

4. What is the ability of the undergraduates to communicate and ethically use information by the undergraduates?
5. What is the ability of the undergraduates to assess and evaluate information by the undergraduates?
6. What is the overall level of information literacy skills of undergraduates in North-central, Nigeria?

Review of literature

The assessment of information literacy skills among undergraduates in Nigerian universities reveals varying levels of competence and challenges. Studies in South-West Nigeria universities show that undergraduates often struggle with information literacy (Tachie-Donkor, & Ezema, 2023; Makinde, Hamzat & Koiki-Owoyele, 2023), while lecturers in private universities benefit significantly from information literacy skills in utilizing electronic information resources (Ajayi, Haliso, & Unegbu, 2023). Additionally, research on undergraduates in Nigeria emphasizes the impact of social media on information-seeking behavior, highlighting the need for improved information literacy skills (Akanbi, Bankole, Olalekan, & Abiola, 2022). Furthermore, a study at the University of Ilorin indicates that undergraduates in the Faculty of Law exhibit above-average information literacy competence and effectively utilize electronic information resources (Bashorun, Olarongbe, Bashorun, & Akinbowale, 2022). Therefore, assessing information literacy skills among undergraduates in Federal Universities in North-central Nigeria is crucial to address challenges and enhance their ability to access and utilize information effectively.

The development of information literacy skills among undergraduates in Federal Universities in North-central, Nigeria is influenced by various factors. Factors such as the students' attitude towards research, research competence, information literacy competence, and the level of library anxiety experienced play crucial roles (Folk, 2022; Makinde, Hamzat & Koiki-Owoyele, 2023; Bashorun, Olarongbe, Bashorun & Akinbowale, 2022). Studies have shown that undergraduates in this region often exhibit poor information literacy skills but an acceptable level of research competence, highlighting the need for early training in information literacy skills to enhance research motivation and comprehension (Okeji, Ilika, & Baro, 2020). Additionally, addressing library anxiety through orientation programs and creating a friendly

library environment can positively impact students' knowledge of library resources and alleviate anxiety, thus fostering the development of information literacy skills among undergraduates.

The basic requirements for undergraduates in order to use information effectively and ethically are Information literacy skills. Rafique (2014) stated that the information revolution and curiosity are significant occurrences in the 21st century after the Industrial Revolution. People, including undergraduates, have many opportunities to acquire information. Information literacy is required due to the abundance of information resources and various methods available to access needed information. Moreover, the information supply is unfiltered, which doubts the content's accuracy and relevancy. Consequently, these create ethical and legal challenges in evaluating, comprehending and using information. The suspicious value and increasing quantity of knowledge also create big issues for the users. Exhaustive information and technology can only make people more informed with the skill and capacity to use information progressively.

Ilogho and Nkiko (2014) carried out a survey on information literacy search skills of undergraduates in Ogun state, Nigeria, and it was found that a significant number of respondents had low knowledge of information literacy skills, showed high paucity in identifying diverse information sources and the various information literacy programmes of the respondents' institutions required hands-on. The researchers concluded that comprehensive information literacy skills are a desideratum in knowledge acquisition in the twenty-first century and suggested that information literacy skills should be incorporated into the secondary and tertiary schools' curricula.

Anafo and Filson (2014) carried out research on promoting information literacy among undergraduates of Ahesi University in Ghana. The findings from their study indicated that the preponderance of the undergraduates needed to learn how to search for information from the library catalogue. Undergraduates failed to distinguish between library catalogues and bibliographic databases. Also, the findings emphasised that some undergraduates need more information literacy skills. The findings showed that undergraduates could not identify the citation to a journal article, cite a source, or evaluate information found on the Internet.

From the findings on the concept of identification, the researchers (Anafo and Filson, 2014) deduced that about 60% of the undergraduates could not identify significant words, even when their task was simplified by being presented with a choice of possible answers. The

researchers, therefore, concluded that a preponderance of the undergraduates cannot access relevant information because they lack information literacy skills about concept identification, search strategies, information sources, accurate use of library catalogues and ethical and legal use of information. Teaching and learning process could be affected negatively based on the deficiencies revealed from the findings of the study on the part of the majority of the undergraduates of Ashesi University College in Ghana.

Saunders et al (2015) conducted a research on information behaviour and information literacy skills of LIS students in eighteen countries around the world. The findings of the study revealed that students are assertive in their general searching abilities. Still, they found it difficult to get started on research assignments, including the ability to define and narrow down topics. The undergraduates rely mostly on search engines and show anxiety about their ability to evaluate Web sources. They also indicated that they cannot determine what constitutes academic integrity or plagiarism and did not know when to cite sources.

The findings deduced that there is a doubt whether LIS students are more competent than their colleagues in other fields of study in locating, searching, evaluating and using information resources. Acquiring necessary information literacy skills will add value to the way they seek and search for information and, eventually, as professional librarians. Saunders et al (2015) further asserted that the research findings have consequences for LIS faculty, who must ensure that their students have the necessary level of mastery of basic information literacy skills. Faculty need to set achievable learning objectives and examine students' progress toward these objectives, which can be achieved through assignments, tests, and discussions.

In a study by Olaniyi and Oyewole (2018), there was a favourable disposition to performance expectancy of electronic information resources by undergraduates at Ajayi Crowther University, Oyo State, Nigeria. The authors studied the undergraduates' effort expectancy as a correlate of electronic information resources use at Ajayi Crowther University. The study's population was five thousand six hundred and sixty-three university undergraduates. The study relied on a survey design, while the quantitative method was adopted as a research instrument through questionnaire distribution. The key findings of the study indicated that a significant number of undergraduates stated that electronic news and electronic encyclopedias constituted the most accessed materials among them. It was revealed further that a positive and

significant relationship exists between the usage of electronic information resources and effort expectancy. The study recommended, among others, that librarians should introduce digital information literacy programmes to students to sustain the positive relationship between effort expectancy and students' usage of electronic information resources, as found in the study.

According to Oluwaseye and Oyetola (2018), students' information literacy skills in private secondary schools in Ibadan, Nigeria, were high. The study was carried out to determine the information literacy skills on social media utilisation by private secondary school students in selected schools in Ibadan, Nigeria. The study was based on the survey design of the quantitative method. The research instrument was a self-developed questionnaire and was administered to two hundred and ten senior secondary school science students in the final year, which were selected through a multistage sampling procedure. The data was analysed using frequency count and percentages. The study revealed that the students were aware of Facebook, Twitter, Google+, Flickr and YouTube. The students use these social media tools to upload and view photographs and pictures, access information on national developments and politics, and post comments on friends' profiles. The study also reported that the students equally encounter challenges such as shifting attention and disengagement from school academic activities.

In a study on the assessment of the usage of Internet search engines in an academic environment by Ozonuwe, Nwaogu, Ifijeh and Fagbohun (2018), the study evaluated the use of Internet search engines among staff and students of Crawford University, Igbesa, Ogun State, Nigeria. Using a questionnaire as a research instrument, a survey comprised two hundred and ninety thousand respondents covering students and staff. The respondents found awareness of online resources and search engines to be high. There was indication from the findings of the study that respondents have skills in using Boolean search operators, the students relied majorly on searching through search engines such as Google, yahoo and MSN search engines while in most cases, searches were straightforward as majority of the respondents were not aware of the advanced search platforms of the platforms above. The study equally reported challenges such as low internet bandwidth rates, information overload in terms of internet resources and inadequate search skills. It was recommended in the survey that librarians and various libraries should not see the Internet as a threat to their jobs but as a compliment which will improve their work and be complementary to their jobs.

It was affirmed that students' information literacy skills for academic activities could be much higher. Adeniran and Onuoha (2018) studied information literacy skills' influence on postgraduate students' use of electronic resources in private university libraries in Southwest Nigeria. The study relied on a survey design, while the instrument was a questionnaire. Five hundred and fifty postgraduate students participated in the survey through a purposive selection of four faculties for representation. The outcomes showed that a significant relationship was found between information literacy skills and utilisation of electronic resources. It was concluded from the findings of the study that access to information and communication technology facilities is being promoted through its utilisation as it paves the way for the creation of more access. Therefore, It was recommended that the management of private universities should ensure that there is a continuous provision of electronic resources with adequate information communication technology tools to facilitate their usage.

Methodology

The population of this study consists of all the undergraduates in all the federal universities in North-Central Nigeria. Descriptive survey of the correlational type was adopted. The total population for this study is one hundred and sixteen thousand, two hundred and thirteen (116,213), (Table 1). North-Central, also known as the Middle-Belt region, is one of the six geopolitical zones in Nigeria. North-Central Nigeria comprises six states (Benue, Kogi, Kwara, Nasarawa, Niger and Plateau states) and the federal capital territory Abuja. According to the National Universities Commission (NUC) 2023, there are seven federal universities in North-central Nigeria, five of which are conventional and two specialised universities (Table 1).

Table 1: Population of the study

S/N	UNIVERSITY	ACRONYM	YEAR OF ESTB.	TYPE	NO OF UNDERGRADUATES
1	University of Ilorin, Ilorin	UNILORIN	1975	Conventional	20,084
2	University of Jos, Plateau	UNIJS	1975	Conventional	18,733
3	Federal University of Technology, Minna,	FUTM	1983	Specialised	13,000

	Niger				
4	Federal University of Agriculture Makurdi, Benue	FUAM	1988	Specialised	13,137
5	University of Abuja, Abuja	UNIABUJA	1988	Conventional	40,000
6	Federal University, Lafia, Nasarawa	FULAFIA	2011	Conventional	7409
7	Federal University, Lokoja, Kogi	FULOKOJA	2011	Conventional	3450
	TOTAL				116,213

Source: Universities websites 2023

A multistage sampling technique was adopted for this study. The primary sampling units are all the seven federal universities in the North-central geo-political zone in Nigeria (Table 1). The first stage was to purposively select the five conventional universities in the zone, namely: University of Jos, University of Abuja, University of Ilorin, Federal University, Lafia and Federal University, Lokoja. Conventional universities were selected to enable the researcher to select homogenous faculties and departments.

The second stage was to select homogenous faculties in all the five conventional federal universities in the zone. A purposive sampling method was adopted to select three homogenous faculties from the five federal universities: Science, Humanities/Art and Social Science. Thus making a total number of three faculties. (Table 2). The third stage was to select two departments from each of the three faculties using purposive sampling techniques. The departments are Chemistry and Microbiology from the Faculty of Science, English and History from the Faculty of Humanities/Art, and Political Science and Economics from the Faculty of Social Science, respectively. Thus, making a total number of six departments selected purposively.

The fourth stage, which is the final stage, was the selection of five per cent (5%) of the total estimated population of the undergraduates from each department in the faculties selected (Table 2). Therefore, the sample size is seven hundred and ninety-seven (797). This is believed to have given a good representation of the various departments within the faculties. The sample

selected was considered adequate for generalisation based on Nwana (1981), who stated that a researcher requires a sample size of twenty per cent for a population of many hundred. However, a researcher requires a sample size of ten per cent for a population of a few thousand. For a population of numerous thousand, a researcher needs a sample size of five per cent or a reduced amount of five per cent.

Table 2: Sample size

S/N	University	No. of Undergr aduates	Science		Social Sciences		Humanities /Art		Total	Sample size 5%
			Chemistry	Microbiolo gy	Political Science	Econom ics	English	History		
1	UNILORIN	20,084	624	650	652	758	843	651	4178	208
2	UNI JOS	18,733	316	470	582	702	750	250	3070	154
3	UNIABUJA	49,436	811	871	1,127	1,027	1,092	1,072	6000	300
4	FULAFIA	7409	200	256	345	278	286	120	1485	75
5	FULOKOJA	3450	152	202	266	214	202	164	1,200	60
	TOTAL	116,213							15,933	797

Source: University Websites, Academic Planning Units 2023

Questionnaire tagged Information Literacy Skills (ILS) was used as the instrument for data collection. It covers the information literacy skills of undergraduates adapting the Standardised Assessment of Information Literacy Skills (SAILS) developed by Kent state University (2003). The main categories of information literacy skills were measured namely; ability to define and articulate information needed, ability to locate information, cability to assess information, ability to organise information appropriately, ability to communicate and ethically use information and ability to evaluate information.

The questionnaire was collated, coded and analysed. The Statistical Package for Social Science (IBM SPSS) was used for the data analysis. Descriptive statistics such as percentage mean and standard deviation were used to analyse the research questions.

Data analysis and Interpretation

Response rate

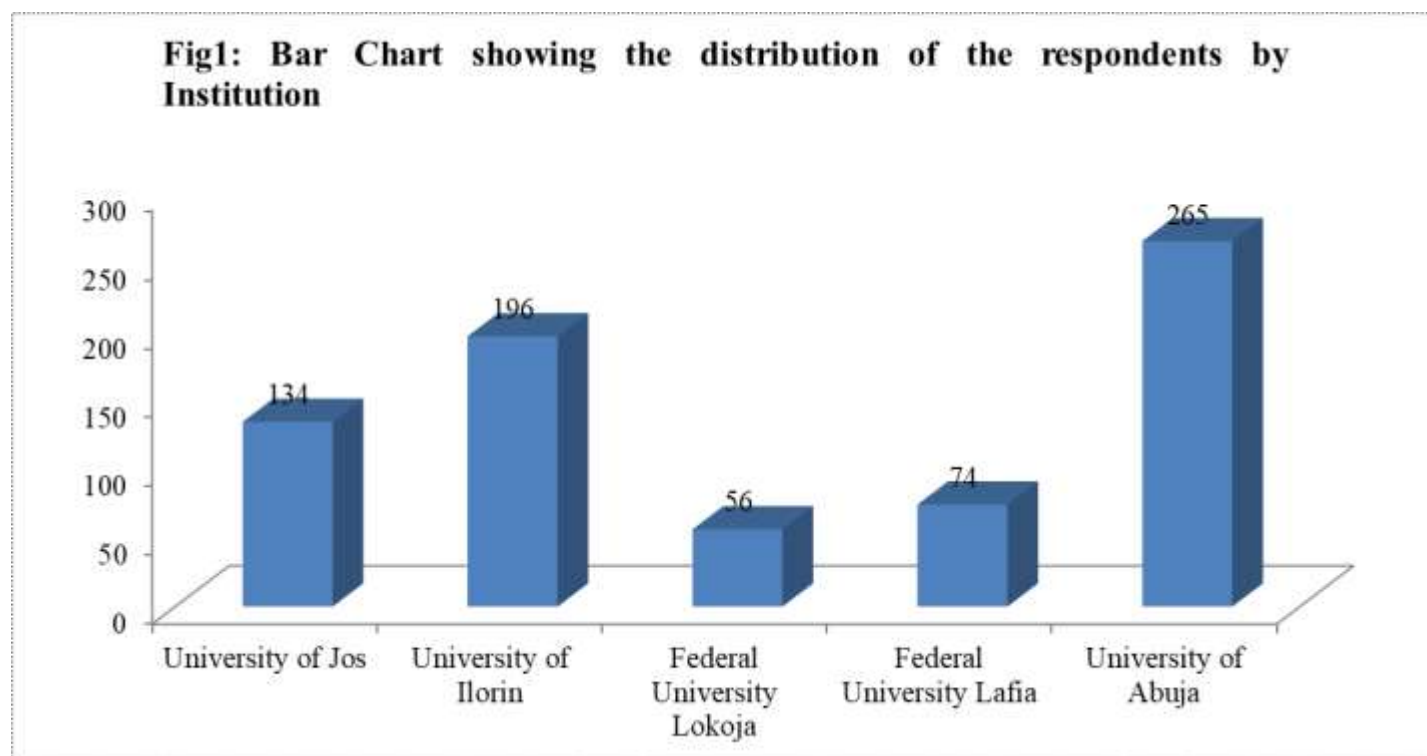


Figure 1 shows the distribution of the respondents by institution. The Bar Chart shows that the University of Abuja has the highest number of respondents (265), followed by the University of Ilorin (196) and the University of Jos (134). In contrast, Federal University of Lokoja has the lowest number of respondents with (56).

Questionnaire administration and response rate

The sample size for the study consisted of 797 undergraduates in the five conventional federal universities in North-central, Nigeria. Out of the 797 copies of the questionnaire administered, 725 copies were returned (91%) and all were found usable and valid for analysis (Table 3).

Table 3 Questionnaire administration and response rate

S/N	Federal universities	Distributed	Returned	Usable	Rate of response (%)
1	University of Jos (UNIJOS)	154	134	134	87
2	University of Ilorin (UNILORIN)	208	196	196	94
3	Federal University, Lokoja (FULOKOJA)	60	56	56	93
4	Federal University, Lafia (FULAFIA)	75	74	74	99
5	University of Abuja (UNIABUJA)	300	265	265	88
	Total	797	725	725	91

Tables 4, present the result of indicator for the ability to define and articulate information needed by the undergraduates in federal universities in North-central Nigeria.

Table 4: Ability to define and articulate information needed by the undergraduates

Statements	Response format	UNIJOS		UNILORI		FULOKOJA		FULAFIA		UNIABUA		
		N	%	N	%	N	%	N	%	N	%	
I am able to formulate questions based on information needed	SD	9	6.7	34	17.3	3	5.4	11	14.9	29	10.9	
	D	4	3.0	16	8.2	1	1.8	7	9.5	21	7.9	
	A	58	43.3	77	39.3	25	44.6	40	54.1	99	37.4	
	SA	63	47.0	69	35.2	27	48.2	16	21.6	116	43.8	
	$\bar{x}$	3.31		2.92		3.36		2.82		3.14		3.11
	S.D	.82		1.06		.77		.94		.97		
I am able to understand research topic	SD	6	4.5	39	19.9	2	3.6	6	8.1	31	11.7	
	D	11	8.2	11	5.6	7	12.5	16	21.6	68	25.7	
	A	62	46.3	77	39.3	25	44.6	24	32.4	101	38.1	
	SA	55	41.0	69	35.2	22	39.3	28	37.8	65	24.5	
	$\bar{x}$	3.24		2.90		3.20		3.00		2.75		3.02
	S.D	.79		1.10		.80		.97		.96		
I know how to expand or refine search questions	SD	9	6.7	32	16.3	4	7.1	9	12.2	42	15.8	
	D	20	14.9	32	16.3	7	12.5	19	25.7	50	18.9	
	A	70	52.2	78	39.8	28	50.0	31	41.9	81	30.6	
	SA	35	26.1	54	27.6	17	30.4	15	20.3	92	34.7	
	$\bar{x}$	2.98		2.79		3.04		2.70		2.84		2.87
	S.D	.83		1.03		.85		.93		1.07		
I am able to create	SD	16	11.9	33	16.8	4	7.1	11	14.9	50	18.9	

my own work based on the information found	D	12	9.0	32	16.3	4	7.1	11	14.4	55	20.8	
	A	59	44.0	74	37.8	25	44.6	36	48.6	89	33.6	
	SA	47	35.1	57	29.1	23	41.1	16	21.6	71	26.8	
	$\bar{x}$	3.02		2.79		3.20		2.77		2.68		2.89
	S.D	.96		1.0		.86		.96		1.06		
	Overall Mean											2.97

Key

SD =Strongly Disagree, D = Disagree, A = Agree, SA= Strongly Agree

Table 4 shows the findings on the ability of undergraduates in federal universities in North-central Nigeria to define and articulate information. The findings from the five universities in the study show that undergraduates at Federal University Lokoja had the highest skills in the ability to formulate questions based on information needed (= 3.36), mostly know how to expand or refine search questions (= 3.04) and were able to create their work based on information found (= 3.20) than the undergraduates from the other universities. The result also indicates that undergraduates at the University of Jos were more able to understand research topics (= 3.24) than undergraduates at other universities. However, respondents from the University of Abuja had the least skills in the ability to understand research topics (= 2.75) and the ability to create their work based on the information needed (= 2.68).

Test of norms on Level of the undergraduates' ability to define and articulate information needed.

Maximum score = 16, Classification = High, Moderate, Low

Universities	Interval	Range	Level	Frequency (%)	
University of Jos N = 134	1-5		Low	6	4.5
	6-10		Moderate	16	11.9
	11-16	12.54	High	112	83.6
University of Ilorin N = 196	1-5		Low	9	4.6
	6-10		Moderate	60	30.6
	11-16	11.40	High	127	64.8
Federal N = 56 University Lokoja	1-5		Low	-	
	6-10		Moderate	8	14.3

	11-16	12.79	High	48	85.7
Federal N = 56	1-5		Low	4	5.4
University Lafia	6-10		Moderate	20	27.0
	11-16	11.30	High	50	67.6
University of Abuja N = 265	1-5		Low	17	6.4
	6-10		Moderate	74	27.9
	11-16	11.42	High	174	65.7

The test of norms on indicates the level of the undergraduates' ability to define and articulate information needed across the federal universities in North-central, Nigeria. The findings show that the level of the undergraduates' ability to define and articulate information needed across the five universities under study is relatively high.

Table 5 presents the result on ability to locate information.

Table 5: Ability to locate information by the undergraduates

Statements	Response format	UNIJOS		UNILORIN		FULOKOJA		FULAFIA		UNIABUJA		
		N	%	N	%	N	%	N	%	N	%	
I rarely find what I am looking for in the library	SD	28	20.9	66	33.7	15	26.8	19	25.7	45	17.0	
	D	34	25.4	32	16.3	18	32.1	15	20.3	54	20.4	
	A	41	30.6	52	26.5	16	28.6	24	32.4	76	28.7	
	SA	31	23.1	46	23.5	7	12.5	16	32.4	90	34.0	
	$\bar{x}$	2.56		2.40		2.27		2.50		2.80		2.51
	S.D	1.07		1.18		1.00		1.10		1.09		
I am able to understand research topic	SD	38	28.4	61	31.1	25	44.6	19	25.7	46	17.4	
	D	48	35.8	42	21.4	19	33.9	11	14.9	56	21.1	
	A	29	21.6	61	31.1	6	10.7	30	40.5	92	34.7	
	SA	19	14.2	32	16.3	6	10.7	14	18.9	71	26.8	
	$\bar{x}$	2.22		2.33		1.88		2.53		2.71		2.33
	S.D	1.01		1.08		.99		1.08		1.05		
I know how to expand or refine search questions	SD	44	32.8	51	26.0	22	39.3	30	40.5	42	15.8	
	D	52	38.8	47	24.0	17	30.4	14	18.9	62	23.4	
	A	22	16.4	58	29.6	13	23.2	19	25.7	94	35.5	
	SA	16	11.9	40	20.4	4	7.1	11	14.9	67	25.3	
	$\bar{x}$	2.07		2.44		1.98		2.15		2.70		2.23
	S.D	.99		1.09		.96		1.12		1.02		
I experience much difficulty in finding information on specific topics while using the Internet	SD	48	35.8	72	36.7	22	39.3	16	21.6	49	18.5	
	D	41	30.6	31	15.8	20	35.7	7	9.5	50	18.9	
	A	25	18.7	57	29.1	9	16.1	33	44.6	95	35.8	
	SA	20	14.9	36	18.4	5	8.9	18	24.3	71	26.8	
	$\bar{x}$	2.13		2.29		1.95		2.72		2.71		2.36
	S.D	1.06		1.15		.96		1.07		1.06		
	Overall Mean											2.36

Key

SD =Strongly Disagree, D = Disagree, A = Agree and SA= Strongly Agree

Table 5 shows the result on the ability of undergraduates to locate information.

The findings revealed that most undergraduates from the University of Abuja rarely found what they were looking for in the library (= 2.80), but were more able to understand research topics faster (= 2.71) and know how to expand or refine search questions better (= 2.70) compared to the undergraduates from other universities. Undergraduates from the Federal University of Lafia experienced much difficulty in finding information on specific topics while using the Internet (= 2.72).

Test of norms on Level of undergraduates' ability to locate information

Maximum score = 16, Classification = High, Moderate, Low

Universities	Interval	Range	Level of awareness	Frequency (%)	
University of Jos N = 134	1-5		Low	15	11.2
	6-10	8.97	Moderate	82	61.2
	11-16		High	37	27.6
University of Ilorin N = 196	1-5		Low	19	9.7
	6-10	9.46	Moderate	99	50.5
	11-16		High	78	39.8
Federal N = 56 University Lokoja	1-5		Low	7	12.5
	6-10	8.07	Moderate	39	69.6
	11-16		High	10	7.9
Federal N = 56 University Lafia	1-5		Low	8	10.8
	6-10	9.89	Moderate	30	40.5
	11-16		High	36	48.6
University of Abuja N = 265	1-5		Low	28	10.6
	6-10	10.92	Moderate	77	29.1
	11-16		High	160	60.4

The test of norms established that the level of the undergraduates' ability to locate information across the five universities under study is moderate. This implies that the undergraduates do not

possess high skills in locating information but have moderate skills in this aspect of information literacy skills.

Table 6 presents the ability of undergraduates to organise information.

Table 6: Ability to organise information by the undergraduates

Statements	Response format	UNIJOS		UNILORIN		FULOKOJA		FULAFIA		UNIABUJA		
		N	%	N	%	N	%	N	%	N	%	
I can limit online search by fields	SD	29	21.6	49	25.0	10	17.9	25	33.8	37	14.0	
	D	33	24.6	26	13.3	18	32.1	19	25.7	43	16.2	
	A	38	28.4	66	33.7	16	28.6	20	27.0	92	34.7	
	SA	34	25.4	55	28.1	12	21.4	10	13.5	93	35.1	
	$\bar{x}$	2.57		2.65		2.54		2.20		2.91		2.57
	S.D	1.09		1.14		1.03		1.06		1.03		
I am familiar with the concept of a controlled vocabulary tool, such as Thesaurus	SD	24	17.9	41	20.9	9	16.1	10	13.5	36	13.6	
	D	38	28.4	40	20.4	15	26.8	10	13.5	52	19.6	
	A	44	32.8	73	37.2	19	33.9	31	41.9	103	38.9	
	SA	28	20.9	42	21.4	13	23.2	23	31.1	74	27.9	
	$\bar{x}$	2.57		2.59		2.64		2.91		2.81		2.70
	S.D	1.01		1.05		1.02		1.00		.99		
I am always confused with so much information presented by the search engines	SD	31	23.1	37	18.9	16	28.6	10	13.5	43	16.2	
	D	51	38.1	37	18.9	22	39.3	12	16.2	61	23.0	
	A	27	20.1	68	34.7	12	21.4	37	50.0	116	43.8	
	SA	25	18.7	54	27.6	6	10.7	15	20.3	42	17.0	
	$\bar{x}$	2.34		2.71		2.14		2.77		2.62		2.52
	S.D	2.61		1.07		.96		.93		.95		
I can effectively use the library catalogue(online and manual) to search for specific library materials	SD	23	17.2	33	16.8	7	12.5	5	6.8	34	12.8	
	D	36	26.9	20	10.2	12	21.4	12	16.2	52	19.6	
	A	45	33.6	77	39.3	21	37.5	32	43.2	95	35.8	
	SA	30	22.4	66	33.7	16	28.6	25	33.8	84	31.7	
	$\bar{x}$	2.61		2.90		2.82		3.04		2.86		2.85
	S.D	1.02		1.05		.99		.88		1.01		
	Overall Mean											2.66

Key

SD =Strongly Disagree, D = Disagree, A = Agree and SA= Strongly Agree

Table 6, as presented, indicates the findings on the ability of undergraduates in federal universities in North-central Nigeria to organise information. The findings revealed that undergraduates from the University of Abuja could limit the online search by fields better (=2.91) than their counterparts at other universities. Undergraduates from the Federal University of Lafia were mainly familiar with the concept of a controlled vocabulary tool, such as Thesaurus (= 2.91), were always confused with so much information presented by the search engines (= 2.77), but could effectively use the library catalogue (online and manual) to search for specific library materials (= 3.04).

Test of norms on Level of undergraduates' ability to organise information

Maximum score = 16, Classification = High, Moderate, Low

Universities	Interval	Range	Level of awareness	Frequency (%)	
University of Jos N = 134	1-5		Low	9	6.7
	6-10	10.10	Moderate	62	46.3
	11-16		High	63	47.0
University of Ilorin N = 196	1-5		Low	7	3.6
	6-10	10.85	Moderate	68	34.7
	11-16		High	121	61.7
Federal N = 56 University Lokoja	1-5		Low	2	3.6
	6-10	10.14	Moderate	33	58.9
	11-16		High	21	37.5
Federal N = 56 University Lafia	1-5		Low	4	5.4
	6-10	10.92	Moderate	26	35.1
	11-16		High	44	59.5
University of Abuja N = 265	1-5		Low	14	5.3
	6-10		Moderate	83	31.3
	11-16	11.2	High	168	63.4

The result indicated that the level of the undergraduates' ability to organise information across the five universities under study is moderate except for the relatively high University of Abuja.

Table 7 presents the result on the ability of undergraduates in federal universities in North-central Nigeria to communicate and ethically use information.

Table 7: Ability to communicate and ethically use information by the undergraduates

Statements	Response format	UNI JOS		UNILORIN		FULOKOJA		FULAFIA		UNIABUJA		
		N	%	N	%	N	%	N	%	N	%	
I know about copyright law	SD	19	14.2	40	20.4	8	14.3	6	8.1	27	10.2	
	D	26	19.4	20	10.2	6	10.7	5	6.8	47	17.7	

	A	37 27.6	80 40.8	16 28.6	41 55.4	96 36.2	
	SA	52 38.8	56 28.6	26 46.4	22 33.8	95 35.8	
	$\bar{x}$	2.91	2.78	3.07	3.07	2.98	2.96
	S.D	1.07	1.80	1.08	.83	.97	
I am familiar with the concept of plagiarism	SD	18 13.4	39 19.9	5 8.9	4 5.4	29 10.9	
	D	18 13.4	26 13.3	5 8.9	10 13.5	49 18.5	
	A	44 32.8	72 36.7	15 26.8	32 43.2	105 39.6	
	SA	54 40.3	59 30.1	31 55.4	28 37.8	82 30.9	
	$\bar{x}$	3.00	2.77	3.29	3.14	2.91	3.02
	S.D	1.04	1.09	.97	.85	.96	
I am able to create my own work based on the information found	SD	17 12.7	38 19.4	2 3.6	9 12.2	44 16.6	
	D	20 14.9	27 13.8	3 5.4	16 21.6	39 14.7	
	A	46 34.3	75 38.3	21 37.5	29 39.2	96 36.2	
	SA	51 38.1	56 28.6	30 53.6	20 27.0	96 32.5	
	$\bar{x}$	2.98	2.76	3.41	2.81	2.85	2.96
	S.D	1.02	1.07	.76	.97	1.06	
I am able to cite information sources correctly	SD	15 11.2	32 16.3	3 5.4	10 13.5	35 13.2	
	D	17 12.7	27 13.8	9 16.1	12 16.2	47 17.7	
	A	49 36.6	77 39.3	22 39.3	34 45.9	102 38.5	
	SA	53 39.6	60 30.6	22 39.3	18 24.3	81 30.6	
	$\bar{x}$	3.04	2.84	3.13	2.81	2.86	2.94
	S.D	.99	1.04	.88	.96	1.00	
	Overall Mean						2.97

Key

SD =Strongly Disagree, D = Disagree, A = Agree, SA= Strongly Agree

Table 7 shows the results on the ability of undergraduates in federal universities in

North-central Nigeria to communicate and ethically use information. The findings show that most undergraduates from the Federal University of Lokoja and the Federal University of Lafia know about copyright law (= 3.07). Undergraduates, mainly from the Federal University of Lokoja, were familiar with the concept of plagiarism (= 3.29), were able to create their work based on the information found (= 3.41) and were able to cite information sources correctly (= 3.13).

Test of norms on Level of undergraduates' ability to communicate and ethically use information

Maximum score = 16, Classification = High, Moderate, Low

Universities	Interval	Range	Level	Frequency (%)	
University of Jos N = 134	1-5		Low	8	6.0
	6-10		Moderate	25	18.7
	11-16	11.93	High	101	75.4
University of Ilorin N = 196	1-5		Low	6	3.1
	6-10		Moderate	68	34.7
	11-16	11.15	High	122	62.2
Federal N = 56 University Lokoja	1-5		Low	-	
	6-10		Moderate	11	19.6
	11-16	12.89	High	45	80.4
Federal N = 56 University Lafia	1-5		Low	-	
	6-10		Moderate	19	25.7
	11-16	11.83	High	55	74.3
University of Abuja N = 265	1-5		Low	8	3.0
	6-10		Moderate	65	24.5
	11-16	11.59	High	192	72.5

Test of norms further reveals that the undergraduates' ability to communicate and ethically use information across the five universities under study is high.

Table 8 presents the results on the ability of undergraduates in federal universities in North-central Nigeria to assess and evaluate information.

Table 8: Ability to assess and evaluate information by the undergraduates

Statements	Response format	UNI JOS		UNILORIN		FULOKOJA		FULAFIA		UNIABUA		
		N	%	N	%	N	%	N	%	N	%	
I understand that a scholarly journal article has been evaluated by an	SD	14	10.4	30	15.3	8	14.3	5	6.8	35	13.2	
	D	19	14.2	17	8.7	7	12.5	4	5.4	38	14.3	
	A	43	32.1	80	40.8	20	35.7	45	60.8	91	34.3	
	SA	58	43.3	69	35.2	21	37.5	20	27.0	101	38.1	

editorial board before publication	$\bar{X}$	3.08		2.96		2.96		3.08		2.97		3.01	
	S.D	1.00		1.03		1.04		.77		1.03			
I am able to use information in critical thinking and problem solving	SD	11	8.2	26	13.3	1	1.8	3	4.1	26	9.8		
	D	19	14.2	24	12.2	7	12.5	11	14.9	54	20.4		
	A	60	44.8	76	38.8	25	44.6	39	52.7	108	40.8		
	SA	44	32.8	70	35.7	23	41.1	21	28.4	77	29.1		
	$\bar{X}$	3.02		2.97		3.25		3.05		2.89		3.03	
	S.D	2.47		1.01		.74		.77		.94			
I do not believe it is possible to determine the quality of a page returned by a search engine	SD	27	20.1	36	18.4	12	21.4	5	6.8	23	8.7		
	D	39	29.1	43	21.9	15	26.8	10	13.5	62	23.4		
	A	46	34.3	66	33.7	23	41.1	43	58.1	88	33.2		
	SA	22	16.4	51	26.0	6	10.7	16	21.6	92	34.7		
	$\bar{X}$	2.47		2.67		2.41		2.95		2.94		2.69	
	S.D	.99		1.06		.95		.79		.96			
I am able to identify sentiments, bias and manipulation in any information sources	SD	21	15.7	33	16.8	10	17.9	5	6.8	33	12.5		
	D	28	20.9	28	14.3	13	23.2	8	10.8	58	21.9		
	A	43	32.1	75	38.3	21	37.5	39	52.7	95	35.8		
	SA	42	31.3	60	30.6	12	21.4	22	29.7	79	29.8		
	$\bar{X}$	2.79		2.83		2.62		3.05		2.83		2.82	
	S.D	1.06		1.05		1.02		.83		.99			
	Overall Mean											2.89	

Key

SD =Strongly Disagree, D = Disagree, A = Agree, and SA= Strongly Agree

Table 8 shows the result of the ability of undergraduates in federal universities in North-Central Nigeria to assess and evaluate information. The findings reveal that undergraduates from Federal University of Lafia and University of Jos had a better understanding on scholarly journal article evaluation by an editorial board before publication (=3.08). Undergraduates from University of Lokoja were more able to use information in critical thinking and problem solving (=3.25). Undergraduates mostly from FULAFIA do not believe it is possible to determine the quality of a page returned by a search engine (= 2.95) and were able to identify sentiments better, bias and manipulation in any information sources (=3.05).

Test of norms on Level of undergraduates' ability to assess and evaluate information

Maximum score = 16, Classification = High, Moderate, Low

Universities	Interval	Range	Level of awareness	Frequency (%)
University of Jos N = 134	1-5		Low	9 6.7
	6-10		Moderate	35 26.1
	11-16	11.37	High	90 67.2

University of Ilorin N = 196	1-5		Low	9	4.6
	6-10		Moderate	54	27.6
	11-16	11.43	High	133	67.9
Federal N = 56 University Lokoja	1-5		Low	1	1.8
	6-10		Moderate	19	33.9
	11-16	11.25	High	36	64.3
Federal N = 56 University Lafia	1-5		Low	-	
	6-10		Moderate	14	18.9
	11-16	12.14	High	60	81.1
University of Abuja N = 265	1-5		Low	9	3.4
	6-10		Moderate	70	26.4
	11-16	11.63	High	186	70.2

The level of the undergraduates' ability to assess and evaluate information across the five universities under study is relatively high.

Table 9, presents the norm test on the overall level of information literacy skills of undergraduates in federal universities in North-central Nigeria.

Table 9: Level of Information Literacy Skills of the Undergraduates

Maximum score = 80, Interval = $\frac{80}{3} = 26.67$, Classification = High, Moderate, Low

Universities	Interval	Range	Level	Frequency (%)
University of Jos N = 134	1-26		Low	4 3.0
	27-52		Moderate	36 26.9
	53-80	54.92	High	94 70.1
University of Ilorin N = 196	1-26		Low	1 0.5
	27-52		Moderate	75 38.3
	53-80	54.28	High	120 61.2

Federal University Lokoja N = 56	1-26		Low	-
	27-52		Moderate	19 33.9
	53-80	55.14	High	37 66.1
Federal University Lafia N = 74	1-26		Low	-
	27-52	50.07	Moderate	23 31.1
	53-80		High	51 68.9
University of Abuja N = 265	1-26		Low	2 0.8
	27-52		Moderate	63 23.8
	53-80	56.76	High	200 75.5

Table 10: Test of norm on the Overall level of Information Literacy Skill of Undergraduates

Grand mean = 55.55, Maximum score = 80, Interval = $\frac{80}{3} = 26.67$, Classification = High, Moderate, Low

Interval	Range	Level	Frequency	Percentage
1-26		Low	7	1.0
27-52		Moderate	216	29.8
53-80	55.55	High	502	69.2

As indicated by the test of norm result from Table 10, it can be deduced that the level of information literacy skills of undergraduates from the Universities of Jos, Ilorin, Abuja and the Federal University of Lokoja was high. At the same time, those from the Federal University of Lafia were moderate. It can therefore be generalised that the level of information literacy skills of undergraduates in federal universities in North-central, Nigeria was high.

Discussion of Findings

To find out the level of information literacy skills of undergraduates, the respondents were subjected to some questions on the indicators for measuring information literacy skills

which are: the ability to define and articulate the information needed, ability to locate information, ability to organise information; ability to communicate and ethically use information; and ability to assess and evaluate information. The findings ascertained that the undergraduates are able to define and articulate the information they need. Although there are variations on the level of the skills of the undergraduates across the universities in the study, the findings revealed that undergraduates from the Federal University of Lokoja were able to formulate questions based on information needed, undergraduates from the University of Jos were able to understand research topics, undergraduates from the Federal University of Lokoja mostly know how to expand or refine search questions and were able to create their work based on information found. Generally, the findings revealed that most undergraduates could define and articulate when they need information. Therefore, their level of ability to define and articulate the information needed is high. This result aligns with a previous study by Befus and Byrne (2011) and Dubick (2013), which suggests that confidence in identifying information needs is a critical aspect of information literacy. However, while students may articulate needs well, this does not necessarily translate to effective information retrieval, indicating a gap in practical application.

The study's findings revealed that the undergraduates' ability to locate information is average. Many of them could rarely find the information resources they were looking for in the library; many were not able to understand research topics, some of them reported that they had difficulty in finding information on specific topics while using the Internet while some of them could not expand or refine search questions. The overall performance of the undergraduates in this indicator of information literacy skills, that is, the ability to locate information, is on average, as revealed by the findings. The implication is that even though the undergraduates' ability to define and articulate needed information is high, their ability to locate information is average. This implies that the undergraduates may have a high level of ability to define and communicate information it is not an indication that they will be able to locate the information needed. This finding highlights a significant concern echoed in studies by Ilogho and Nkiko (2014) and Anafo and Filson (2014), which pointed out that students often lack practical skills in finding relevant information. This indicates a need for targeted training programs to enhance

these skills, suggesting that curricula should include practical workshops on information retrieval techniques.

The ability to organise information is also one of the indicators that measure information literacy skills. The findings revealed that undergraduates' ability to organise information is on the average. Some of them can limit online search by fields, some are familiar with the concept of a controlled vocabulary tool such as Thesaurus. At the same time, some of them are always confused with so much information presented by search engines. However, some can use the library catalogue to search for specific materials. The findings further revealed that the undergraduates' ability to communicate and ethically use information is high. This result aligns with the findings of the Association of College and Research Libraries (2008), which stress the importance of ethical use of information. High awareness indicates progress, but it also necessitates ongoing education to ensure that this awareness translates into practice, especially in academic writing and project work. The undergraduates exhibited high skills in communicating and ethically using information. The majority of them are aware of copyright law and its implications. Most undergraduates know the concept of plagiarism and can create their work based on the information they find. Most of them can cite information sources correctly. This is consistent with findings from Sasikala and Dhanraju (2010), which emphasize the importance of organizational skills in information literacy. The moderate ability suggests that institutions should focus on teaching methodologies for organizing information, such as creating bibliographies and using citation management tools.

The result showed that undergraduates' ability to evaluate and assess information is high. This finding resonates with the work of Saunders et al. (2015), who found that while students may assert confidence in their evaluation skills, they often struggle in practical scenarios. This suggests that universities should incorporate critical thinking and evaluation exercises into their curricula to reinforce these skills. The majority of the undergraduates' understand that an editorial board has evaluated a scholarly journal article before publication, they can use information in critical thinking and problem-solving, they can determine the quality of a page returned by a search engine and they are also to identify sentiments, bias and manipulation in any information sources. The overall result for the level of information literacy skills of undergraduates is relatively high.

In agreement with the findings of this study, Befus and Byrne (2011) asserted that undergraduates at Wayne State University, Detroit, USA, are more confident in their ability to identify plagiarism but lack confidence in finding articles for a topic. Dubick's (2013) finding also agrees with the finding of this study; the study revealed that the strongest perceived skill students at California Community College possess is the ability to identify and address the information needed. In contrast to the findings of this study, Ilogho and Nkiko 2014 asserted that undergraduates in Ogun state, Nigeria, have low knowledge of information literacy skills and need to identify need diverse information sources. This was discovered through a survey on information literacy skills of undergraduates in Ogun state, Nigeria. At variant with the study also are the findings of these researchers Anafo and Filson (2014); Taylor and Dalal (2014); Ukepebor and Emojorho (2012), and Conway (2011), who all submitted that the majority of the undergraduates did not know how to search the information from the library catalogue, failed to distinguish between library catalogue and bibliographic database. Most undergraduates appeared to need help identifying the author of a web page and indicated they could not determine the author of a web page. Therefore, they all concluded that the respondents lacked information literacy skills.

Conclusion and Recommendation

Although the findings from the study indicated that undergraduates have high information literacy skills, the overall performance of the undergraduates on the ability to locate information and the ability to organise information is low. It is, therefore, imperative that undergraduates be trained in these aspects of information literacy skills. This could be achieved through remedial courses by integrating information literacy skills into the curriculum.

The findings indicate that while undergraduates in North-central Nigeria possess certain skills in information literacy, there are critical areas requiring improvement, particularly in locating and organizing information. The study's implications suggest a comprehensive approach to integrating information literacy into the educational framework, emphasizing not just theoretical knowledge but practical skills that are essential for academic success.

In conclusion, the findings underscore the necessity for ongoing training, curriculum enhancements, and support systems to improve the overall information literacy skills of undergraduates, which is vital for their academic and professional futures.

Recommendations

Curriculum Integration: Incorporate information literacy training into the undergraduate curriculum, ensuring that courses include practical components focused on locating, organizing, and evaluating information.

Workshops and Training: Organize regular workshops and training sessions for students on effective information retrieval techniques, citation management, and ethical use of information.

Library Resources: Enhance library resources and support services, providing students with access to tools and guidance for navigating both physical and digital information sources.

Collaborative Learning: Encourage collaborative projects that require students to engage in information sharing and critical evaluation, fostering peer learning and application of information literacy skills.

Continuous Assessment: Implement continuous assessment methods to evaluate students' information literacy skills throughout their academic journey, allowing for timely interventions and support.

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