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## Information Literacy Competencies of Undergraduate Students in a Nigerian Specialized University

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### ABSTRACT

The study examined the information literacy competencies of undergraduate students in the Federal University of Petroleum Resources, Effurun (FUPRE), Nigeria. A descriptive survey research design was adopted for the study. FUPRE has a total of 2246 undergraduate students from the two colleges (Science and Technology). Simple random sampling and purposive sampling were used to select 10% of the population. The sample size used for the study is Two Hundred and Twenty-Five (225) undergraduate students. The instrument used for eliciting data from the respondents was a structured questionnaire. The data collected via the questionnaire were analysed using the descriptive statistics method. The findings revealed that the undergraduate students of FUPRE are highly information literate. The study has shown that the challenges in accessing information are no/ poor internet access, erratic power supply, and the absence of relevant academic databases, among others. The findings also revealed several strategies that can be deployed to improve the information literacy competencies of the undergraduate students. The study recommends amongst others that management should ensure power is uninterrupted in FUPRE to enable students charge their devices to browse the internet and also swift internet access should be made available within the FUPRE community to boost undergraduates' access to information.

## 1. Introduction

Information can be defined as already processed data that can be used for quality decision-making. Information is a key requirement for survival, as we need it to stay safe, make a living, relate with others, and do things properly. According to Aghauche, Nkamnebe, and Nkamnebe (2019), one of the most noticeable characteristics of our technology-driven society in the twenty-first century is the information explosion.

Advances in Information and Communication Technologies (ICTs) and their use in information generation and transmission have aided these phenomena known as the "information explosion. The ability to access and use information efficiently has been regarded as one of the keys to excelling in all life endeavours. That is why Hemamalini and Shobha (2020) argue that individuals must be information literate to properly access and utilise various sorts of

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sources. The terms "information literacy" and "literacy" are made up of two words. Literacy refers to one's capacity to read, write, and comprehend information. Participating in information literacy activities requires a high level of skills and competencies. Information literacy refers to the capacity to successfully access, process, and utilise data in a computer and network context. The Association of College and Research Libraries'(2016) in their policy document on the Framework for Information Literacy in Higher Education defines information literacy as a set of integrated abilities encompassing the reflective discovery of information, the use of information to solve problems, and the ability to comprehend how information is created and evaluated, as well as the application of information producing new knowledge and responsibility.

Information literacy competencies are the skills, abilities, and knowledge required in accessing, evaluating, and using information sources for various information needs. Information literacy is a must-have for researchers in this age of information age with the high level of information explosion and various information sources. Undergraduates are popularly referred to as researchers because they engage in a wide range of information-seeking activities to meet their information, research, and other academic needs. This is why Duncan and Varcoe (2012) stated, the development of information literacy abilities is useful to students not just while they are in school, but also once they join the workforce. It is in the university's best interests to design an information literacy policy, incorporate it into students' curricula, and offer the necessary atmosphere and facilities for information literacy to flourish. Most undergraduates nowadays appear to be lacking in research

skills due to a lack of information literacy, which is required for the successful use of information resources. "Most students at Nigerian universities have been found to lack the advanced skills that are required to access the university libraries' information resources, both print and online as complained by Baro and Zuokemefa (2011). This shortcoming frequently leads to the employment of mercenaries for research-related tasks such as assignments, term papers, and research reports. Understanding the information literacy competencies of undergraduate students will enable university and library management to formulate policies and organise programmes that will boost the information literacy competencies of their undergraduate students and this will help boost the research output of their students. This necessitates an appraisal of information literacy competencies of undergraduates in Federal University of Petroleum Resources, Effurun, Delta State, Nigeria.

The goal of this study is to evaluate undergraduates' information literacy skills at the Federal University of Petroleum Resources in Effurun, Delta State (FUPRE). The study's objectives are as follows:

1. To determine the information literacy competencies of undergraduates of undergraduate students in FUPRE?
2. What are the problems encountered by the undergraduates while accessing the information resources?
3. To suggest strategies for improving the information literacy skills of undergraduates.

## **Research Questions**

**The study will provide answers to the following research questions:**

1. What are the information literacy competencies of undergraduates of undergraduate students in FUPRE?
2. What are the problems encountered by the undergraduates while accessing the information resources?
3. What are these strategies for improving the information literacy skills of undergraduates?

At the University of Mines and Technology (UMaT), Tarkwa, Ghana, Kavi, Anafo, et al., (2019) investigated Information Literacy Skills Among Undergraduate Students. The bulk of the undergraduates exhibited basic ICT abilities, although their understanding of various search tactics was limited. Lwehabura (2018) investigated students at Saoine University of Agriculture's information literacy skills, as well as the hurdles and problems they confront when seeking information. Although students have information literacy, the data revealed that many of them had major gaps in their information literacy knowledge and abilities in crucial components of searching for information from electronic sources. Baldwin, Gadd, and Balatsoukas (2010) investigated how students seek information. Students lacked the knowledge and abilities to effectively use the search features, according to the findings. They have little or no experience with Boolean operators. Web search abilities and usage of online information resources by library and information science undergraduates at a Nigerian University of Education were researched by Osisanwo and Josephs (2020). Electronics forum, Wikipedia news, electronic journals, a discussion group forum,

and Google scholar is among the online information resources available to undergraduate students, according to the data, and the degree of web search abilities held by the undergraduates questioned is high. In yet another study, In Benue State, Nigeria, Member, Famaren, and Ternenge (2021) investigated the impact of undergraduate students' information retrieval skills on their effective use of electronic resources in university libraries. Undergraduate students lacked information literacy abilities such as the capacity to pick academic content, evaluate search results, navigate from links, formulate queries, and utilize OPAC, according to the study, which has a substantial impact on their usage of e-resources in university libraries. Poor information skills, according to Adekannbi (2016), are based on students' search difficulties and poor academic achievement. According to Rehman and Alfaresi (2009), the majority of students lacked abilities in catalog browsing and usage, information source selection, search strategy design, and source selection.

Scholars in the reviewed literatures highlighted some of the challenges undergraduates face in accessing information that meets their needs. In Benue State, Nigeria, Member, Famaren, and Ternenge (2021) investigated the impact of undergraduate students' information retrieval skills on their effective use of electronic resources in university libraries. The findings revealed that the challenges preventing undergraduate students in Benue State from effectively accessing information using electronic resources in university libraries include slow internet connectivity, erratic power supply, a limited number of networked computers, a lack of awareness of e-resources, difficulty in identifying relevant databases, a

lack of proper training and orientation programs for students, among others. Hemamalini and Shobha (2020) studied the Information literacy competencies among Undergraduate students of Mysore City. The findings revealed that Lack of knowledge about information retrieval, difficulty in locating the sources in the library, lack of knowledge about the resources available in the Library, Unfamiliarity with Search strategies, Lack of ICT knowledge, etc. Some of the obstacles highlighted in information access in research done by Reetseng (2016) include students' difficulty in learning new abilities due to a lack of fundamental library and computer skills, the scope of training, and time-related concerns. The study of Web search capabilities and usage of online information resources by library and information science undergraduates at a Nigerian University of Education by Osisanwo and Josephs (2020). Limited access to the Internet, time limits, sluggish Internet connection, irregular power supply, and insufficient expertise to obtain essential information are among the obstacles faced by undergraduate students in accessing information, according to the research. According to Okello-Obura and Ikoja-Odongo (2010), most students struggle to search and retrieve information from these electronic sources due to a lack of necessary computer expertise and retrieval procedures. Different scholars in the literature have recommended strategies for improving the information literacy skills of undergraduate students. Information literacy should be integrated into the curriculum, according to Singh (2014). Syamalamba (2011) advocated for regular evaluations of first-year undergraduates' information literacy skills upon admission to college, successful completion of a test to measure information

literacy competencies during the student's first year of studies, and integration of information literacy instruction into undergraduate and graduate academic programs. To properly administer the programs, Bruce (2002) stressed the importance of having an information literacy policy. According to Baro and Zuokemefa (2011), the general studies training materials should be revised to include information literacy skills. According to Ogunlana, Oshinaike, Akinbode, and Okunoye (2013), information skills and knowledge should be included in the curriculum and made mandatory for all students. However, Yebowaah (2018) assessed the Information Literacy Skills among Undergraduate Students of University for Development Studies, Tamale, Ghana. The researcher recommends that information literacy should be made compulsory for all Level 100 students of the University for Development Studies to boost their skills and students should be made to know the relevance of information literacy and encouraged to consider it as part of the academic curriculum. Uche and Nwabuisi (2008) evaluated the Information Literacy Skills of Nigerian University Undergraduate Library Users. According to the findings, some of the ways for enhancing information literacy include teaching students how to utilize the library early in their careers and using problem-based learning techniques in teaching and learning. Undergraduate Information Literacy and Skills: The Inclusion of Information Literacy and Skills in the Undergraduate Curriculum was studied by Mark (2000). Information literacy programs should be included in the curriculum, according to the research, to improve students' knowledge of information access, evaluation, and usage.

### 1. Research Methodology

A descriptive survey research design was adopted for the study. FUPRE has a total of 2246 undergraduate students from the two colleges (Science and Technology) for the 2021/2022 academic session. This data was got from the Academic planning division of the University. Simple random sampling and purposive sampling were used to select 10% of the population. The sample size used for the study is Two Hundred and Twenty-Five (225) undergraduate students from the five (5) departments of the College of Technology

and six (6) departments from the college of science. The instrument used for eliciting data from the respondents was a structured questionnaire. Data were collected using a structured questionnaire and data were collected from the undergraduate students from their hostel, classroom, library, and eateries within the school. The data collection period lasted for one month. The data collected via the questionnaire were analysed using the descriptive statistics method (Frequency Count and Percentage).  
Result.

### 3. Results and Discussion

#### 3.1 Results Presentation

##### 3.1.1 Questionnaire Response Rate (Undergraduates)

**Table 1: Question Response Rate**

S/N	Undergraduate Students	No. of Questionnaire Administered	No. of Questionnaire Returned	Percentage (%) of Questionnaire Returned
	<b>Total</b>	<b>225</b>	<b>216</b>	96%

A total of 225 copies of the questionnaire were distributed, with 216 (96%) copies returned. The response rate of 96% is considered sufficient for the study because the acceptable response rate for most studies is 60% (Dulle, Minish-Majanja & Cloete, 2010).

##### 3.1.2 Analysis of the Demographic Information of the Respondents

**Table 2: Distribution of the Respondents by Department**

College of Technology				
S/N	Departments	Frequency	Percentage	
1	Petroleum Engineering	36	16.67	
2	Chemical Engineering	28	12.96	
3	Marine Engineering	16	7.41	
4	Electrical and Electronics Engineering	18	8.33	
5	Mechanical Engineering	12	5.56	
College of Science				
6	Chemistry/ Industrial Chemistry	08	3.7	
7	Physics/ Geophysics	16	7.4	
8	Earth Sciences (Geology/ Geophysics)	42	19.45	
9	Computer Science	14	6.48	
10	Mathematics	12	5.56	

11	Environmental Science and Toxicology	14	6.48
<b>Total</b>		<b>216</b>	<b>100%</b>

From Table 2, 36(16.67%) of the respondents are from the Department of Petroleum Engineering, 28(12.96%) are from the department of chemical engineering, 16(7.41%) are from the department of marine engineering, 18(8.33%) of the respondents are from the electrical and electronics engineering department, 12(5.56%) are from the mechanical engineering department, 8(3.7%) of the respondents are from

chemistry/ industrial chemistry, 16(7.4%) of the respondents are from physics/ geophysics department, 42(19.45%) of the respondents are from earth sciences, 14(6.48%) of the respondents are from the computer science department 12(5.56%) of the respondents are from the mathematics department, 14(6.48%) of the respondents are from the environmental science and toxicology.

**Table 3: Distribution of the Respondents by Sex**

<b>Gender</b>	<b>No. of Respondents</b>	<b>Percentage (%)</b>
Male	146	68%
Female	70	32%
<b>Total</b>	<b>216</b>	<b>100%</b>

According to Table 3, 146(68%) of the respondents were male and 70(32%) were female. In the study, there are more male respondents than female respondents.

**3.1.3 Analysis of the Key Findings of the Study**

**Table 4: Information Literacy Competencies of Undergraduates Students**

<b>Information Literacy Competencies of Undergraduates</b>	<b>Frequency</b>	<b>Percentage</b>
I often know when information is required	216	100%
I know various sources of information	148	69%
I have the skills to evaluate information sources	98	45%
I have the relevant information search skills	122	56%
I know how to use information for meeting my information needs	186	86%
I know how and when to discard information when no longer required	168	78%

From the findings in Table 4, it is glaring that the respondents’ information literacy competencies can be rated as high. As the respondents indicated they know when information is required, how to use information for meeting their various information needs, know-how and when to discard information when no longer required, know various sources of information, they possess the relevant information search skills, and a few indicated they have the skills to evaluate information



source

**Table 5: Problems Encountered by the Undergraduates while accessing the information**

<b>Information Access Problems of Undergraduates</b>	<b>Frequency</b>	<b>Percentage</b>
Poor information evaluation skills	64	30%
Difficulty in locating information sources	22	10%
Inadequate information search skills	26	12%
No/ Poor Internet Access	216	100%
Erratic Power Supply	216	100%
Time-related constraints	124	57%
Poor Information Communication Technology Competencies	74	34%
Most relevant information databases sources are locked	216	100%
Inadequate knowledge of library usage	86	40%

From Table 5, it is glaring that the challenges that militate against the accessibility of information by the undergraduate students are not poor information literacy competencies but other factors like no/ poor internet access, erratic power supply, and the locking of most relevant information databases.

### 3.1.4 Strategies for improving the information literacy Competencies of undergraduates

**Table 6: Strategies for improving the information literacy skills of undergraduates**

<b>Strategies for Improving Undergraduate Information Literacy Competencies</b>	<b>Frequency</b>	<b>Percentage</b>
Incorporation of information literacy course to the General Studies Course for All 100 Level Students.	216	100%
Adding information literacy to the Curriculum of all the Departments in FUPRE.	126	53%
Training Undergraduates on Information Search Strategies.	216	100%
Training undergraduates on Information Evaluation and Use	202	94%
Teaching students use of Library at Early Stages	164	76%
Orientating students on how to access databases subscribed to by their library	216	100%
Lecturers should recommend sources that can meet their students' research and academic needs.	112	52%
By organising capacity building programmes on information communication technologies	108	50
By creating a favourable environment that can boost the information-seeking abilities of undergraduates	146	68%
By providing the necessary facilities to boost accessibility and use of information	212	98%

From Table 6, it is glaring that the strategies that can be deployed to improve the information literacy competencies of the undergraduate students include incorporation of information literacy course to the general studies course for all 100 level students, training undergraduates on information search strategies, orientating students on how to access databases subscribed to by their library, by providing the necessary facilities to boost accessibility and use of information, training undergraduates on information evaluation and use, teaching students to use of the library at early stages, by creating a favourable environment that can boost the information-seeking abilities of undergraduates, adding information literacy to the curriculum of all the departments in FUPRE, lecturers should recommend sources that can meet their students' research and academic needs and by organising capacity building programmes on information communication technologies.

### **3.2 Discussion of the Findings**

The study is aimed at ascertaining the information literacy competencies of undergraduate students in Federal University of Petroleum Resources, Effurun, Delta State, Nigeria. The findings of the study will be discussed according to the objectives of the study.

#### **3.2.1 The information literacy competencies of undergraduates of undergraduate students**

The findings revealed that the undergraduate students in FUPRE are highly information literate. As the respondents indicated they

know when information is required, how to use information for meeting their various information needs, know-how and when to discard information when no longer required, know various sources of information, they possess the relevant information search skills, and a few indicated they have the skills to evaluate information sources. This finding disagrees with the study of Member, Famaren, and Ternenge (2021) which revealed that the undergraduate students lacked information literacy abilities such as the capacity to pick academic content, evaluate search results, navigate from links, formulate queries, and utilize OPAC, according to the study, which has a substantial impact on their usage of e-resources in university libraries. The study also disagrees with the study of Baldwin, Gadd, and Balatsoukas (2010) which revealed that students lack the knowledge to effectively use the search features, according to the findings. They have little or no experience with Boolean operators.

#### **3.2.2 Problems Encountered by the Undergraduates while accessing information**

The findings have shown that the problems encountered by the undergraduates' students while accessing information are not poor information literacy competencies but other factors like no/ poor internet access, erratic power supply, and the locking of most relevant information databases. These findings agree with the study of Member, Famaren, and Ternenge (2021) which revealed that the challenges preventing undergraduate students in Benue State from effectively accessing information using electronic resources in university libraries include slow internet connectivity, erratic power supply, a limited number of networked

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computers, a lack of awareness of e-resources, difficulty in identifying relevant databases, a lack of proper training and orientation programs for students, among others.

### **3.2.2. Strategies for improving the information literacy skills of undergraduates**

The findings revealed that the strategies that can be deployed to improve the information literacy competencies of the undergraduate students include incorporation of information literacy course to the general studies course for all 100 level students, training undergraduates on information search strategies, orientating students on how to access databases subscribed to by their library, by providing the necessary facilities to boost accessibility and use of information, training undergraduates on information evaluation and use, teaching students to use of the library at early stages, by creating a favourable environment that can boost the information-seeking abilities of undergraduates, adding information literacy to the curriculum of all the departments in FUPRE, among others. This finding agrees with the study of Zuokemefa (2011) Ogunlana, et al. (2013) Singh (2014) which revealed that information literacy should be taught at the General Studies for 100 level students, as well as added to the curriculum and made compulsory for all students.

## **4. Conclusion**

Information literacy has remained a topical issue in the information science and librarianship literature. Information literacy competencies are a must for undergraduates as they will enable them to know when information is required, how to search and retrieve information, it will also enable them

to access and use the information to meet their various educational and information needs. Researching on the information literacy competencies of undergraduates will expose the exact situation about their literacy level which will enable university and library management to formulate policies and make plans to boost the literacy level of their undergraduate students. The assessed the information literacy competencies of undergraduate students of FUPRE. The study has shown that the undergraduate students of FUPRE are highly information literate. Although the undergraduates are information literate, they still face some problems in accessing information that can meet their needs; the challenges are no/ poor internet access, erratic power supply, and the locking of most relevant information databases, among others. The study has also highlighted some of the strategies that can be deployed to improve the information literacy competencies of the undergraduate students which include incorporation of information literacy course to the general studies course for all 100 level students, training undergraduates on information search strategies, orientating students on how to access databases subscribed to by their library, by providing the necessary facilities to boost accessibility and use of information, training undergraduates on information evaluation and use, teaching students to use of the library at early stages, by creating a favourable environment that can boost the information-seeking abilities of undergraduates, adding information literacy to the curriculum of all the departments in FUPRE.

The study can help the management of FUPRE make plans to mitigate some of the challenges students face in accessing and using information. From the study reveals,

the researcher recommends that:

- i) The management should ensure power is uninterrupted in FUPRE to enable students to charge their devices to browse the internet for seeking information.
- ii) Swift internet access should be made available within FUPRE Community to boost undergraduates' access to information.
- iii) All required facilities and equipment which are required to boost undergraduates' access and use of information should be made available.
- iv) Periodic training should be carried out for undergraduates students for the sustainability of their high information literacy level.

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