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Discipline Variation In Information Retrieval Skills And Use Of Electronic Information Resources By Undergraduates In University Of Uyo, Akwa Ibom State, Nigeria

Raphael Ebiefung

University of Ibadan, Nigeria, raphaelebiefung@gmail.com

Airen Adetimirin Ph.D

University of Ibadan, Nigeria, aeadetimirin@gmail.com

Olawale Oyewole

University of Ibadan, Nigeria, oyewolebaba01@yahoo.com

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INTRODUCTION

The emergence and use of electronic information resources (EIRs) in universities have brought about enormous changes, especially in the ways information are generated, managed and disseminated. These changes have made it imperative for libraries to have both print and electronic collections to effectively serve undergraduates who often form a greater population of the library community. With the heterogeneous nature of undergraduates due to discipline variations, it is now becoming difficult, if not impossible, for libraries to effectively serve undergraduates across all disciplines without acquiring, organising and providing access to EIRs. This, however, is continuously pushing libraries to digital environment. As a result, EIRs have come to be an integral part of information infrastructure in universities and are essential for academic work of undergraduates.

Das and Maharana (2013) explained that EIRs include OPAC, CD-ROMs, online databases, e-journals, e-books, Internet resources, etc. A major advantage of EIRs over the print is that retrieval is not limited by the constraints of time and space. They facilitate research and offer today's undergraduates different opportunities to access relevant and up-to-date information from different subject fields to complement academic work. Thus, despite the enormous benefits of using EIRs for academic work their use by undergraduates is still below expectation (Nwabueze & Urhiewhu, 2015). This is often attributed to lack of adequate retrieval skills.

In a study of 200 undergraduates by Bankole, Ajiboye & Otunla (2015) at the Federal University of Agriculture, Abeokuta, Ogun state, Nigeria, it was discovered that while 65 (38.2%) of the respondents lacked sufficient retrieval skills, 58 (33%) admitted to having difficulty in retrieving information which resulted in their low usage of EIRs. This implies that deficiencies in skills of information retrieval may translate to inadequate use of EIRs. Undergraduates are therefore, expected to acquire adequate searching skills for effective navigation and exploitation of various electronic media for information. These skills are often known and referred to as information retrieval skills.

Amidst discipline variations, information retrieval skill could be referred to as a 'nucleus' of academic work. Information retrieval skill is the ability to find information by defining and formulating the right queries such that only the relevant information are found as result of a particular query. Although, subject area to some extent may determine information retrieval skills as observed by Prasad, (2017) observed that undergraduates in sciences develop high level information retrieval skills than other students, it is plausible to state that information search skill

is the backbone of a research by undergraduates irrespective of discipline. The possession of these skills could lead to effective searching and retrieving of information by undergraduates. Thus, indicators for measuring information retrieval skills are informational skills, operational skills and strategic skills. All these skills when combined have the potential of making the process of retrieving information, less tasking and effective for undergraduates (Ekenna and Mabawonku (2013).

Gui (2007) defines information skills as the ability needed to navigate, select the appropriate information, evaluate the information and re-use information. They involve being able to handle the ever-changing electronic contents of computer and information sources as well as know when, where and how to look for the resources. Operational skills enable undergraduates to make effective use of EIRs. Soby (2003) added that operational skill includes a foundational knowledge of hardware, software applications, networks, and elements of digital technology. Operational skills are anchored on the need for undergraduates, to learn to operate the computer and understand how the information systems are organised by learning the basic skills such as use of keyboard, mouse, and disk management. This is important for information downloads and storage which are cardinal in the use of electronic EIRs. This implies that undergraduates ought to have the basic skills of computer and related devices and understand how computer applications work in order to gain independent use of various electronic information resources across the globe.

Another important component that makes up the information retrieval skills is the strategic retrieval skills. The ability for an undergraduate to create right search terms and input right queries could be termed strategic retrieval skills. The present era of continuous increase in information, especially EIRs makes the strategic retrieval skills essential. According to Fernandez-Luna, Huete, MacFarlane & Efthimiadis (2009) acquiring sophisticated search strategies will facilitate the opportunity in searching information and maximise the searching successes of the student. Van Dijk (2005) defines strategic skills as the capacity to use computer and network sources as the means for particular goals and for the general goal of improving one's position in society. Thus, the three components of information retrieval skills contribute dependently to effective retrieval process across all disciplines by undergraduates.

EIRs have been established to be essential resource for undergraduates irrespective of academic discipline or interest. It is evident from literature that not only the characteristics of a discipline, but adequate skills in the use of EIRs in the discipline that explains the use of EIRs and libraries (Jayakumar & Surudhi, 2015). Undergraduates, therefore, need a combination of informational, operational and strategic retrieval skills to be able search effectively wide range of

EIRs for diverse academic purposes. As provision of access to electronic information is becoming increasingly popular in academic libraries (Oyeniya, 2013), coupled with the changing nature of information needs and discipline variations of undergraduates, it is necessary to have a better understanding of the information retrieval skills of undergraduates and their use of EIRs. It is against this background that this study sought to investigate the influence of discipline variations in information retrieval skills on use of EIRs by undergraduates in public universities in Akwa Ibom state, Nigeria.

Statement of the problem

In this Internet-dominated era and age of electronic information, undergraduates are expected to be expert searchers of information in all formats to complement their academic work. Findings from literature revealed that undergraduates have diverse information needs that necessitate their use of EIRs for academic work. EIRs contain gamut of information that are up-to-date and easily accessible; thus, essential for research and other academic activities. However, despite the benefits of EIRs, literature have revealed that the use of EIRs to complement academic work is still below expectations among undergraduates in Nigeria. This has greatly affected their creativity and innovation in their various fields of study.

Previous studies have revealed that various reasons such as lack of adequate information retrieval skills may contribute to low usage of EIRs. The reason for this could be that since EIRs reside online and offline media, their effective usage for academic activities may depend on information retrieval skills. In addition, informational skills, operational skills and strategic skills are core skills of information retrieval; it could be assumed therefore, that a lack of either of these skills may hinder adequate use of EIRs.

Whereas studies have revealed that lack of skills may have negative effect on the use of EIRs, disciplines or subject areas may also determine information retrieval skills and use of EIRs by undergraduates. Thus, it was against this backdrop, that this study sought to investigate the influence of discipline variations in information retrieval skills on the use of EIRs for academic activities by undergraduates in university of Uyo, Akwa Ibom state.

Research questions

The following research questions were raised to the study:

1. What are the academic activities undergraduates use EIRs for in University of Uyo?
2. What are the access points to EIRs use by the undergraduates in university of Uyo?
3. What is the frequency of use of EIRs by the undergraduates in University of Uyo?
4. What is the level of information retrieval skills of the undergraduates in University of Uyo?

5. What is the relationship between information retrieval skills and use of EIRs by the undergraduates in University of Uyo?

2. LITERATURE REVIEW

Electronic information resources contain quality information and therefore, useful for research and other academic activities of undergraduates. Quadri, Idowu and Adetimirin (2014) investigated the purpose of use of library EIRs by 291 undergraduates in private universities in Ogun state, Nigeria. The study adopted descriptive survey design and questionnaire was used as the instrument of data collection. It was found in the study that EIRs are used for assignments by most undergraduates 128 (64%) and 49(89.9%) in Babcock and Redeemer's universities respectively. 111 (55.5%) undergraduates in Babcock as well as 31 (56.4%) in Redeemer's indicated to have used EIRs for research/project. From the results, it can be deduced that EIRs are invaluable resources for research and other academic work

In a similar study, Owolabi, Idowu, Okocha and Ogundare (2016) conducted a study on the utilisation of EIRs by 200 undergraduates of University of Ibadan, Nigeria. Descriptive survey design was adopted and a questionnaire was used for data collection. The study revealed that while 158(84%) and 41(21.8%) of the respondents often used the Internet and e-journals respectively for academic work, online databases were also used often by the respondents 83(44.1%). CD-ROMs were rarely used by some 112(59.6%) of the respondents. As all respondents 188(100%) admitted that they rarely use OPAC, some 152(80.9%) indicated that they rarely use e-books for academic work. These results show that undergraduates use EIRs at different frequencies.

Bankole, Ajiboye and Otunla (2015) conducted a study on use of EIRs by 200 undergraduates of Federal university of Agriculture, Abeokuta Ogun state. It was found that the main access points were outside campus and university ICT centres and only 31.2% of respondents used the library to access electronic resources. Insufficient skills, difficulty in finding relevant information and frequent power outage were identified as the major barriers hindering effective use of electronic information resources by undergraduates. Training students in information searching skills by the library was recommended to increase the information searching skills of the undergraduates. It could be concluded that information retrieval skills are crucial for undergraduates to effectively use EIRs from various locations.

Toyo (2017) studied information searching skills and use of EIRs by 121 Library and Information science undergraduates of Delta State University, Abraka, Nigeria. The study revealed that 118 (97.6%) have the ability to recognize the information needed, 117 (96.7%) possessed the skills to search for information online and 102 (71.1%) of the respondents do not have the skills to construct a logical search strategy. Ekenna and Mabawonku (2013) also studied the level

of information retrieval skills of 359 undergraduates in Federal universities in South-west, Nigeria and found that the level of information retrieval skills of undergraduates were above average (weighted mean $\bar{x} = 3.17$ out of a maximum obtainable score of 5.00). Thus, it could be concluded high information retrieval skills are needed by undergraduates for effective academic work.

The use of EIRs by undergraduates may depend on their information retrieval skills. Ilogho and Nkiko (2014) investigated Information Search Skills of 359 undergraduates in five selected private universities in Ogun State, Nigeria and revealed that preponderance of undergraduates are highly deficient in identifying diverse information sources due to low knowledge of information search skills. The study reported that majority 162 (45.13%) of undergraduates had difficulty in combining right search terms in retrieving information from a database. The study concluded that sound information retrieval skills is a desideratum in knowledge acquisition in the digital age; hence, recommended inter alia; that information literacy skills be integrated into the secondary and tertiary schools' curricula to prepare students for university education.

Academic discipline occupies a very important place in information retrieval skills as well as use of EIRs by undergraduates. Enwannta & Nwalo (2017) investigated the influence of subject background on use of EIRs by 275 undergraduates in Federal University of Agriculture (FUTA) and Obafemi Awolowo University (OAU). The survey research design was adopted in the study with the questionnaire as a major instrument for data collection. Simple random sampling and purposive sampling techniques were adopted for the study. Results of the study showed that majority 64 (54.1%) of the respondents at FUTA indicated that subject background did not encourage their use of EIRs while 21(18.8%) indicated that their subject background is a disadvantage to their use of EIRs. The results at OAU was quite different as 87(55.1%) of the respondents indicated that their subject background has encouraged their use of EIRs while 30(19.0%) stated that their subject background is a disadvantage to their use of EIRs. Thus, one could infer from the findings that subject background is an important factor in the use of EIRs by the undergraduates. It could, therefore, be advised that undergraduates should constantly develop their information retrievals for effective navigation of EIRs.

The reviewed literature have revealed that EIRs are crucial components in universities as far as academic activities of undergraduates are concerned. Studies have shown that subject or academic discipline is an important factor in the use of EIRs among undergraduates. Thus, while it may be plausible to argue that some undergraduates in Nigerian possess information retrieval skills that have facilitated their use of EIRs, it may be wrong to dismiss that undergraduates need high information retrieval skills for prompt and adequate use of EIRs. No literature was found on

discipline variations in information retrieval skills of undergraduates with regards to the use of EIRs in universities in Akwa Ibom state, Nigeria.

3. METHODOLOGY

Descriptive survey design was adopted for this study and the target population for this study were the undergraduates in University of Uyo. The population of undergraduates at the University of Uyo at the period this study was conducted was 34,301 as at 6 April, 2019 (Table 1.) Purposive sampling technique was adopted to select three faculties from the university to constitute the study sample. Two departments were randomly selected to equal representation of the faculties. Questionnaire was used for data collection. Descriptive and inferential statistics such as frequency, percentages and correlation were used to analyse data.

Table 1. Study population and Sample size

Table 1 shows the study population of undergraduates as distributed across the selected faculties in University of Uyo.

Faculty	Department	Population	Sample Size (5%)
Engineering	Agricultural Eng.	662	33
	Civil Eng.	704	35
Education	Physics Edu.	777	38
	Chemistry Edu.	801	40
Science	Chemistry	677	33
	Computer science	667	33
	Total	4,288	212

Source: Faculty Office(s) Register 2018/ 2019 Session

4. RESULTS AND DISCUSSION

Demographic characteristics of respondents

Table 1 presents results on the demographic information of the undergraduates in university who participated in the study.

Table 2. Demographic information of respondents

Variables	University of Uyo (UNIUYO)	
	Frequency	%
Faculty		
Engineering	67	32.4
Education	75	36.2
Sciences	65	31.4
Gender		
Male	165	79.7
Female	42	20.3
Age (years)		
15-24	114	55.1
25-29	68	32.9
30-35	12	5.8
36-45	13	6.2
45 and above	-	--
Level		
100	5	2.4
200	59	28.5
300	70	33.8
400	52	25.1
500	21	10.2
Religion		
Christianity	200	96.6
Islam	7	3.4

N=207

Table 2. presents results on the demographic information of the undergraduates and results showed that respondents in Education 75 (36.2%), Engineering 67(32.4%) and Science 65(31.4%) participated in the study and more male respondents 165 (79.7%) than female 42 (20.0%). More than half of the undergraduates 114 (55.1%) were between 15-24 years of age while the least 12 (5.8%) were between 30-35 years of age. The undergraduates who were in 300 level participated in the study more than the others 70 (33.8%) while the least 5 (2.4%) were in their first year.

Research question one: What are the academic activities undergraduates use EIRs for in University of Uyo?

Tables 3 focuses on the various academic purposes that necessitated the use of EIRs by the undergraduates

Table 3 Use of electronic information resources by the undergraduates in University of Uyo

E-resources	Engineering						Education						Science					
	CA F %	RP F %	S F %	EP F %	WP F %	Mean SD	CA F %	RP F %	S F %	EP F %	WP F %	Mean SD	CA F %	RP F %	S F %	EP F %	WP F %	Mean SD
Internet	13 9.4	51 76.1	3 4.5	-	-	4.76 0.72	20 26.7	52 69.3	-	3 4.0	-	4.71 0.69	13 20.0	52 80.0	-	-	-	4.79 0.74
Electronic journals	13 9.4	33 49.3	21 31.4	-	-	4.15 1.35	23 30.7	23 30.7	-	22 29.3	-	4.00 1.25	8 12.3	26 40.0	27 41.5	4 6.2	-	3.15 1.35
Electronic books	17 25.4	21 31.4	26 38.9	1 1.5	2 3.0	3.66 1.67	19 25.3	44 58.7	5 6.7	3 4.0	4 5.3	4.21 1.67	15 23.0	41 63.0	-	5 7.7	4 6.2	4.21 1.67
CD-ROMs	15 22.4	14 20.9	27 40.3	7 10.4	4 6.0	3.09 1.99	-	-	15 20.0	10 13.3	50 66.6	2.09 0.78	11 16.9	32 49.3	6 9.2	5 7.7	11 19.0	4.09 1.99
Online Databases	15 22.4	13 19.4	33 49.3	4 6.0	2 3.0	2.84 0.84	11 14.7	46 61.4	-	12 16.0	6 8.0	4.01 1.84	9 13.8	33 50.8	15 23.0	4 6.2	4 6.2	3.96 1.64
OPAC(Online Public Access Catalogue)	10 14.9	16 23.9	39 68.2	-	2 3.0	2.92 0.73	15 20.0	42 56.0	12 6.0	-	6 8.0	4.33 1.73	9 13.8	36 55.4	16 24.6	-	10 15.4	3.99 1.73
Online Abstract	7 10.4	13 19.4	36 53.8	8 11.9	3 4.5	2.99 1.45	7 9.3	40 53.3	7 9.3	4 5.3	9 12.0	4.07 1.85	6 9.2	42 64.7	6 9.2	5 7.7	6 9.2	4.07 1.85
Overall Mean	24.41						27.42						28.26					

Key: Class Assignment (CA), Research Purpose (RP), Seminar (S), Examination Preparation (EP) Writing Project (WP)

The results in Table 3 shows that most of the undergraduates in the three faculties {Science 52 (80.0%), Engineering 51 (76.1%) and Education 52 (69.3%)} noted that they used the Internet for research purposes. Findings revealed that some of the respondents in Engineering 13(19.4%), little above half in Science 33 (50.8%) and a significant number in Education 46 (61.4%) affirmed that they used online databases for research purposes. Online abstracts and CD-ROMs were also used for research purposes by the respondents {Engineering 13 (19.4%), Education 40 (53.3%) and Science 42 (64.7%) for research purposes. Results also showed that more than three-fifths 39 (68.2%) in Engineering, a few in Education 12(6%) and Science 16 (24.6%) pointed out that they used OPAC for seminar. It was found that e-books were also used by undergraduates in their respective faculties Engineering 17 (25.4%), Education 19 (25.3%) and Science 15 (23.0 %) for Class assignment. While CD-ROMs were also found to be useful to undergraduates in Engineering 15(22.4%) and Science 11 (16.9%) as they indicated to have used CD-ROMs for class assignment, no respondents in Education admitted.

Thus, although most undergraduates in university of Uyo used EIRs like the Internet, online databases, online abstracts and electronic books for research purposes, the results across the faculties have shown that variation in discipline is a major determinant in the use of EIRs by undergraduates. This implies that EIRs that are not useful to academic discipline of undergraduates are most likely not to be used or underutilised. The patronage of various EIRs by undergraduates in the three faculties of the university is a pointer that EIRs provide relevant information that are in consistent with and in supportive of, various academic disciplines of undergraduates. This confirms the results of the study conducted Quadri, Idowu and Adetimirin (2014) on the purpose of use of EIRs and reported that most undergraduates use EIRs for assignments, research and other academic activities.

Research question two: What are the access points to EIRs use by the undergraduates in University of Uyo?

Table 4 presents data on the access points of the EIRs use by the undergraduates

Table 4 Access points to electronic information resources use by the undergraduates

E-resources	Engineering						Education						Science					
	All	FL	DL	ICT	OC	Mean	All	FL	DL	ICT	OC	Mean	All	FL	DL	ICT	OC	Mean
	F	F	F	F	F	SD	F	F	F	F	F	SD	F	F	F	F	F	SD
	%	%	%	%	%		%	%	%	%	%		%	%	%	%	%	
Internet	33 49.3	8 11.9	8 11.5	15 22.4	3 4.5	3.63 1.22	35 46.7	11 14.7	5 6.7	13 17.3	11 14.7	3.51 1.04	-	7 10.8	4 6.2	17 26.2	33 40.9	1.67 2.32
Electronic journals	16 23.9	6 9.0	18 26.9	10 14.9	17 25.4	2.34 1.18	-	10 13.3	14 18.7	9 12.0	26 34.7	2.11 1.32	-	10 15.4	13 20.0	11 16.9	31 47.7	1.61 2.12
Electronic books	17 25.4	17 25.4	4 6.0	28 41.8	1 1.5	2.79 1.66	15 20.0	18 24.0	5 6.7	33 44.0	4 5.3	2.22 1.42	-	14 21.5	2 3.1	33 50.8	16 24.6	2.01 1.61
CD-ROMs	17 25.4	3 4.5	20 29.9	16 23.9	11 6.4	2.43 1.11	13 17.3	7 9.3	20 26.7	17 22.7	18 24.0	2.35 1.00	-	17 26.2	15 23.1	16 24.6	17 26.2	2.32 0.77
Online Databases	16 23.9	10 14.9	8 11.9	29 43.3	4 6.0	2.49 1.00	-	12 16.0	18 24.0	34 45.4	11 14.7	2.02 1.00	-	12 18.5	12 18.5	29 44.6	12 18.5	1.78 0.62
OPAC(Online Public Access Catalogue)	14 20.9	1 1.5	21 31.3	16 23.9	15 22.4	2.12 1.01	-	11 14.6	26 34.7	19 25.3	19 25.3	1.88 1.01	-	12 18.5	18 27.7	16 24.6	19 29.2	2.44 0.82
Online Abstract	17 25.4	17 25.4	4 6.0	28 41.8	1 1.5	2.79 1.66	15 20.0	18 24.0	5 6.7	33 44.0	4 5.3	2.22 1.42	-	14 21.5	2 3.1	33 50.8	16 24.6	2.01 1.61
Overall Mean	18.59						16.31						13.84					

- **Key: Faculty Library (FL), Departmental Library (DL), ICT Centre on Campus (ICT) Outside Campus (OC)**

Results revealed that almost half of the undergraduates in Engineering 33(49.9%), Education 35(46.7%) and none in Science access the internet from all locations which are: faculty library, departmental library, ICT centre on campus and outside campus. Few Respondents in Engineering 3(4.5%), Education 11 (14.7%) and some in Science 33(40.9%) indicated to have used the Internet outside campus. It also found that CD- ROMs were used in Engineering 17 (25.4%), education 13 (17.3%) and none in Science from all locations. Results also showed that little above half of the respondents 33 (50.8%) in Science and Engineering 33(50.3%) as well as some respondents in Education 33 (40.0%) used electronic books and online abstracts in the ICT centre on campus (Table 4). Online databases were also found to be mostly used by the respondents in Engineering 29 (43.3%), Education 34(45.4%) and Science 29 (44.6%) in ICT centre. It was also revealed that respondents in Engineering 21 (31.3%), Education 26(34.7%) and Science 18 (27.7%) noted that they used OPAC in the Departmental library.

Hence, the findings have shown that undergraduates in Engineering and Education access EIRs like the Internet and e-journals in the faculty and departmental libraries, ICT centre on campus and also outside the campus while undergraduates in science mostly accessed internet and e-journals outside campus. This seeming disparity in the access points could be that the undergraduates in Science do seldom find their desired EIRs such as the Internet and e-journals within the campus. CD-ROMs, electronic books and online abstracts were accessed at the ICT centre on campus. This signifies that the undergraduates have different alternatives of accessing the Internet for their academic activities such as research and study. This conclusion corroborates the position of Bankole, Ajiboye and Otunla (2015) conducted a study on use of electronic information resources by 200 undergraduates of federal university of Agriculture, Abeokuta Ogun state and found that undergraduates make use of EIRs outside campus, university ICT centres and the library.

Research question three: What is the frequency of use of EIRs by undergraduates in University of Uyo?

Table 5 presents data on the frequency of use of EIRs for various academic activities by undergraduate

Table 5. Frequency of Use of E-resources by the UGs in university of Uyo

Faculty E-resources	Engineering							Education							Science						
	D F %	OW F %	TW F %	OM F %	TM F %	O F %	NU F %	D F %	OW F %	TW F %	OM F %	TM F %	O F %	NU F %	D F %	OW F %	TW F %	OM F %	TM F %	O F %	NU F %
Internet	55 82.1	5 7.5	4 6.0	- - -	- - -	3 4.5	- - -	61 81.3	7 9.3	3 4.0	- - -	- - -	4 5.3	- - -	55 84.6	5 7.7	2 3.1	- - -	- -	3 4.6	- -
Electronic journals	- - -	17 25.4	2 3.0	5 7.5	2 3.0	33 49.3	- - -	10 13.3	22 29.3	3 4.0	10 13.3	- - -	30 40.0	- - -	8 12.3	142 1.5	2 3.1	7 10.8	1 1.5	33 50.8	- -
Electronic books	3 4.5	10 14.9	10 14.9	11 16.4	6 9.0	27 40.3	- - -	4 5.3	15 20.0	12 16.0	15 20.0	5 6.7	24 32.0	- - -	4 6.2	9 13.8	8 12.3	12 18.5	4 6.2	28 43.1	- -
CD-ROMs	1 1.5	7 10.4	12 17.9	3 4.5	4 6.0	34 50.7	6 9.0	3 4.0	8 10.7 21.3	16 21.3	4 5.3	2 2.7	32 42.7	10 13.3	2 3.1	5 7.7	10 15.4	- - -	3 4.6	31 47.7	14 21.6
Online Databases	3 4.5	10 14.9	5 7.5	8 11.9	18 26.9	21 31.3	2 3.0	5 6.7	9 12.0 14.7	11 14.7	10 13.3	5 6.7	22 29.3	13 17.3	3 4.6	- - -	13 20.0	7 10.8	16 24.6	22 33.8	4 6.2
OPAC (Online Public Access Catalogue)	2 3.0	2 3.0	10 14.9	4 6.0	11 6.4	33 49.3	5 7.5	3 4.0	1 1.3	7 9.3	- - -	18 24.0	32 42.7	14 18.7	2 3.1	1 1.5	10 15.4	- - -	7 10.8	35 53.8	10 15.4
Online Abstracts	- - -	8 11.9	9 13.4	6 9.0	2 3.0	42 62.7	- - -	- - -	6 8.0	10 13.3	12 16.0	- - -	47 62.7	- - -	- - -	4 6.2	7 10.8	9 13.8	2 3.1	43 66.2	- - -

Key: Daily (D), Once a week (OW), Twice a week (TW), Once a month (OM) Twice a month (TM), Occasionally (O), Never (N)

Table 5 shows that more than four-fifths of the undergraduates 55 (84.6%) in Science, 55 (82.1%) in Engineering and 61 (81.3%) in Education noted that they used the Internet on a daily basis. More than three-fifths 63 (66.2%) in Science, 42 (62.7%) in Engineering and 47 (62.7%) in Education acknowledged that they used online abstracts occasionally. Furthermore, more than half in Science 35 (53.8%) and close to half 33 (49.3%) in Engineering and about two-fifths 32 (42.7%) in Education indicated that they used OPAC occasionally. While electronic books were mostly used occasionally as identified by the respondents respectively in Science-28(43.1%), Engineering 27 (40.3%) and Education 24 (32.0%), some of the respondents in Science-14 (21.5%), Engineering 17 (25.4%) and Education 22 (29.3%) admitted that they use e-journals Once a Week for academic work. A few respondents in {Science-14(21.6%), Engineering 6 (9.0%) and Education 10 (13.3%) indicated that they have Never Used CD-ROMs for academic work

The findings have indicated that the Internet was used daily by majority of the respondents in the faculties and other EIRs like OPAC, online abstracts and online databases were used occasionally. This attests to the indispensability of the Internet and other EIRs to all academic disciplines. The indispensability of the internet could be attributed to the fact that the Internet contains gamut of information resources which can be accessed and used anytime without constraints of time and space. The occasional used of OPAC, online databases and online abstracts as well as low use of the CD-ROMs may be as a result of inadequate knowledge among undergraduates on their importance in academic work. This supports the findings of Owolabi, Idowu, Okocha and Ogundare (2016) who reported in their study of utilisation of electronic Information resources by Undergraduates of University of Ibadan that undergraduates used the Internet, electronic journal and online databases often for academic purposes while the Online Public access Catalogue was rarely used by all the respondents.

Research question four: What is the level of information retrieval skills of undergraduates in University of Uyo?

Table 6 presents results of the level of informational, operational and strategic skills of undergraduates across the three faculties.

Table 6 Level of information retrieval skills of the undergraduates in University of Uyo

Retrieval Skills	Engineering						Education						Science					
	VG F %	G F %	A F %	P F %	VP F %	Me an SD	VG F %	G F %	A F %	P F %	VP F %	Me an SD	VG F %	G F %	A F %	P F %	VP F %	Mean SD
Informational Skills	41	26	- -	- -	- -	4.58	46	29	- -	- -	- -	4.44	39	22	4	- -	- -	4.54
Definition of your needs for research	61.2	38.8				0.56	61.3	38.7				0.59	60.0	33.8	6.2			0.61
Locating information in e-resources	30	22	15	- -	- -	3.90	24	38	13	- -	- -	3.33	18	23	24	- -	- -	3.91
	44.8	32.8	22.4			0.74	32.0	50.7	17.3			0.77	27.7	35.4	36.9			0.81
Selecting articles with ease	15	52	- -	- -	- -	3.90	22	32	21	- -	- -	3.11	15	30	20	- -	- -	3.92
	22.4	77.6				0.74	29.3	42.7	28.0			0.65	23.1	46.2	30.8			0.74
Summarizing materials in your own words	33	25	9	- -	- -	4.33	23	40	11	1	- -	3.33	27	28	8	- -	- -	4.23
	49.3	37.3	13.4			0.79	30.7	53.3	14.7	1.3		0.79	41.5	43.1	12.3			0.79
Understanding terminologies used in databases	10	13	41	3	- -	3.43	13	18	42	2	- -	3.11	10	13	38	- -	- -	3.42
	14.9	19.4	61.2	4.5		0.89	17.3	24.0	56.0	2.6		0.66	15.4	20.0	58.5			0.90
Use of reference sources to increase familiarity of topics	17	37	13	- -	- -	4.06	16	30	29	- -	- -	4.01	13	31	21	- -	- -	3.88
	25.4	55.2	19.4			0.67	21.3	40.0	38.7			0.55	20.0	47.7	32.3			0.72
Operational Skills	50	17	- -	- -	- -	4.28	42	20	13	- -	- -	4.08	39	11	15	- -	- -	4.43
Use of mouse and keyboard	74.6	25.4				0.85	56.0	26.7	17.3			0.75	60.0	16.9	23.1			0.77
Copying information into your storage device such as flash drive and diskette	27	27	13	- -	- -	4.15	38	26	8	3	- -	4.01	35	21	7	2	- -	4.37
	40.3	40.3	19.4			0.88	50.7	34.7	10.7	4.0		0.92	53.8	32.3	10.8	3.1		0.89
Retrieving information from flash drive or diskette	17	26	18	6	- -	3.81	32	23	16	4	- -	3.21	24	23	14	4	- -	4.03
	25.4	38.8	26.9	9.0		0.93	42.7	30.7	21.3	5.3		0.81	36.9	35.4	21.5	6.2		0.92
Scanning images	18	28	20	- -	1	3.91	19	36	20	- -	- -	3.33	24	24	14	3	- -	4.06
	26.9	41.8	29.9		1.5	0.87	25.3	48.0	26.7			0.77	36.9	36.9	21.5	4.6		0.88
Access of on-line databases	11	24	32	- -	- -	3.66	20	34	19	2	- -	3.30	29	9	24	1	2	3.83
	16.4	35.8	47.8			0.79	26.7	45.3	25.3	2.7		0.88	44.6	13.8	36.9	1.5	3.1	0.80
Download files from online databases	21	26	16	2	2	3.93	25	34	11	3	2 2.7	3.44	24	29	9 13.8	- -	3	4.12
	31.3	38.8	23.9	3.0	3.0	0.97	33.3	45.3	14.7	4.0		0.80	36.9	44.6			4.6	0.88
Strategic Skills	2	4	23	31	7	2.45	3 4.0	5 6.7	34	22	11	2.24	2	24	30	- -	9	2.42
Use of Boolean operators (OR, AND, NOT).	3.0	6.0	34.3	46.3	10.4	0.88			45.3	29.3	14.7	0.64	3.1	36.9	46.1		13.8	0.90
Combining two terms to retrieve information	4	7	37	- -	19	2.91	9 12.0	10	41	15	- -	2.40	6	8	37	13	1	3.08
	6.0	10.4	55.2		28.4	0.85		13.3	54.7	20.0		0.79	9.2	12.3	56.9	20.0	1.5	0.87

Retrieval Skills	VG F %	G F %	A F %	P F %	VP F %	Mea n SD	VG F %	G F %	A F %	P F %	VP F %	Mea n SD	VG F %	G F %	A F %	P F %	VP F %	Mean SD
Use of truncation search techniques (\$, *, +) to retrieve information	- -	12 17.9	18 26.9	34 50.7	3 4.5	2.58 0.84	- -	15 20.0	30 40.0	27 36.0	3 4.0	2.51 0.94	10 15.4	22 33.8	- -	29 44.6	4 6.2	2.58 0.83
Use of title search for electronic catalogue(OPAC) search	4 6.0	18 26.9	33 49.3	8 11.9	4 6.0	3.15 0.93	5 6.7	9 12.0	36 48.0	17 22.7	8 10.7	3.20 0.98	14 21.5	3 4.6	28 43.1	14 21.5	6 9.2	2.91 0.99
Use of author search for electronic catalogue (OPAC) search.	5 7.5	26 38.8	21 31.3	13 19.4	2 3.0	3.28 0.97	7 9.3	18 24.0	23 30.7	20 26.7	7 9.3	3.19 0.87	4 6.2	21 32.3	20 30.8	16 24.6	4 6.2	3.08 1.04
Shelf search for electronic catalogue (OPAC) search.	22 32.8	12 17.9	21 31.3	12 17.9	- -	3.60 1.23	14 18.7	34 45.3	9 12.0	12 16.0	6 8.0	3.55 1.44	16 24.6	9 13.8	6 9.2	12 18.5	22 33.8	3.26 1.28
Use of search engines such as Yahoo, Google, Alta Visa and Google scholar etc.	35 52.2	16 23.9	12 17.9	4 6.0	- -	4.22 0.95	38 50.7	20 26.7	14 18.7	3 4.0	- -	4.16 0.90	36 55.4	16 24.6	11 16.9	2 3.1	- -	4.32 0.88
Overall mean	70.1						64.0						70.1					

Key: Very Good (VG), Good (G), Average (A), Poor (P), Very Poor (VP)

In order to determine the level of informational, operational and strategic retrieval skills of undergraduates in three faculties, a test of norm was conducted. A scale between 0-10 shows that the level of retrieval skill is low, the scale between 10.1- 20.1 indicates that the level of retrieval skills is moderate and the scale between 20.2-30.0 shows a high level of retrieval skills by the undergraduates. In faculty of Engineering, the average mean for informational skill of undergraduates was (24.25). In science faculty, the average mean for informational skills was revealed as (23.9) and undergraduates in Education were found to have the least informational skills with an average score of (21.33).

Although from the test of norm conducted, the level of information skills of undergraduates in the three faculties is high, it is plausible to argue that undergraduates in Engineering are more proficient in defining, locating and selecting right search terms during retrieval process than others. This is evident in their average mean score in informational skills which is the highest. It was also revealed in the study that undergraduates in science faculty possess higher Operational skills (24.84) than Engineering and Education whose average mean for operational skills were (23.74) and (21.37) respectively. The highest score of operational skills by undergraduates in Science faculty may be attributed to the presence of computer science department in the faculty; hence, the positive influence in the level of operational skills of undergraduates. From the results, it could be inferred that undergraduates in Science faculty are able to download files, handle keyboard and mouse effectively and consequently have access to online databases which are cardinal in information retrieval process than others. Strategic retrieval skill was found to be higher in Engineering (22.19) than Science (21.65) and Education (21.25). The implication of this is that undergraduates in Engineering faculty are capable in using various search engines and other sophisticated retrieval techniques than other undergraduates. Thus, the three components of information retrieval skills contribute dependently to effective retrieval process by undergraduates.

Therefore, to determine the level of information retrieval skills of undergraduates, a test of norm was also conducted. A scale between 0-31.6 shows that the level of information retrieval skills is low, the scale between 31.7- 63.3 indicates that the level of information retrieval skills is moderate and the scale between 63.4-95.0 shows a high level of information retrieval skills by the undergraduates. Findings showed that the level of information retrieval skills of the undergraduates was high across faculties in the university as reflected by the overall mean values; (Engineering-70.1, Education-64.0 and Science-70.6). This is an indication that the undergraduates have the skills associated with information retrieval through different EIRs. This differs from the finding of

Ekenna and Mabawonku (2013) who investigated the level of information retrieval skills of 384 undergraduates in Federal universities in Nigeria and reported that undergraduates' informational retrieval skills were generally little above average. The discipline variation in information retrieval skills is a pointer that academic discipline is an important factor that could influence information retrieval skills and use of EIRs by undergraduates. Thus, one could infer from the findings that subject background is an important factor in the use of electronic resources by the undergraduates. This agrees with the findings of Enwanta and Nwalo (2017) who investigated the influence of subject background on use of EIRs by undergraduates in OAU and found that majority 87(55.1%) of the respondents in OAU indicated that subject background encourage their use of EIRs.

Test of norm for level of information retrieval skills of the undergraduates

Score	Level
0-31.6	Low
31.7-63.3	Moderate
63.4-95.0	High

Research question five: What is the relationship between information retrieval skills and use of electronic information resources by the undergraduates in University of Uyo?

Tables 6 captured the results of the correlation analysis done between information retrieval skills and use of EIRs by undergraduates in UNIUYO. Findings showed that there was a significant positive relationship between information retrieval skills and use of EIRs by the undergraduates ($r=.193^{**}$; $df =206$; $p< 0.01$) in UNIUYO. This implies that the higher the level of information retrieval skills, the more the undergraduates use the EIRs for academic activities. This corroborates the position of Ekenna and Mabaowonku (2013) who examined the relationship between information retrieval skills and undergraduates' use of EIRs and found that there is a significant relationship between the two variables. This implies that undergraduates will only use EIRs adequately when they possess high information retrieval skills.

Table 7 Relationship between information retrieval skills and use of electronic information resources by the undergraduates

Variables	Mean	Std. Deviation	N	R	Df	Remarks
Information retrieval skills	70.37	7.730	207	.193**	206	Sig.
Use of electronic information resources	26.92	8.353				

Conclusion and Recommendations

The use of EIRs for academic activities is essential as they provide the opportunity for the students to access current and diverse formats of information without the barriers of time and space. An undergraduate that uses EIRs regularly for academic activities might develop competence on how to retrieve relevant information from these sources. Whereas as found in the study, EIRs were widely used by undergraduates across disciplines to meet diverse information needs and many in each discipline could not substantially utilise them because of either low information retrieval skills or ignorance of their availability and relevance. Therefore, there is an urgent need for unbiased training of undergraduates across disciplines considering the role of information retrieval skills in research and studies in general. The problem of slow Internet network that hindered the use of EIRs by could addressed the management of the university by equipping the ICT Unit with the required human and material resources to ensure fast Internet connection. The issue of irrelevant EIRs can be tackled if the acquisition librarians in the universities ensure that the users have an input into the EIRs that are acquired or subscribed to by the libraries. If the inputs of users are taken into consideration, relevant electronic information resources will be provided. In addition, to sustain the high level of information retrieval skills by the undergraduates, it is important for librarians to intensify information literacy programmes where users are trained on how access information in an effective manner from the various EIRs.

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