

Issues in use of web-based information resources by public polytechnic students in southwestern Nigeria

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Abstract

Many Nigerian polytechnic libraries seem not subscribe to or renew their subscriptions to Web-based Information Resources (WBIR) databases despite its increasing popularity in the academic world. Hence, the study was aimed to look into recurring issues in the use of WBIR by public polytechnic students in Southwestern Nigeria. Six public polytechnics out of the 16 offering Higher National Diploma (HND) programmes were selected by stratified random sampling to reflect federal and stage polytechnics. Proportionate to size sampling technique was used to select 1,463 HND students. The instruments used were WBIR use for Academic Tasks ($\alpha=0.98$), and Challenges of WBIR Use ($\alpha=0.84$) scales. Data were analysed using proportionate and descriptive statistics. Majority of the respondents 709(51.1%) listed Google as the major search engine used. Others indicated a combination of Google and other search engines like Google, and Bing (71 or 5.1%), Chrome, Google, and Operamini (71 or 5.1%). Wikipedia (136 or 9.8%), and Myschool.com 55 (4.0%) are common database/website used by the students. Challenges to WBIR use include high cost of accessibility ($=2.73$) and download delay ($=2.64$). Public polytechnic students in Southwestern Nigeria used web-based information resources, especially obtainable through Google search engine and Wikipedia. Information literacy programs at polytechnic libraries should not be taken lightly.

Keywords: Databases; Public polytechnic students; Polytechnic libraries; Search engines; Use of web-based information resources; Web-based information resources issues.

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1. Introduction

New types of competencies, abilities, and experiences are needed to meet the needs of the moment, which go beyond the usual library context. Simultaneously, polytechnic students must familiarise themselves with the procedures for locating, accessing, and retrieving preferred information from electronic information bearing resources, particularly web-based information resources. Hence, There is increase in risks that students in the information age will become perplexed by the abundance of information available on many websites from which to choose and use for academic activities. Similarly, the prevalence of undesired information on websites offers a serious hazard, as students prefer to spend the majority of their studying time on websites that include unsolicited content, such as pornographic materials, while conducting Internet searches. ^[1]

Many students, however, may not be familiar with the technique for accessing and using information: that a web browser should be launched first, and databases should be accessed via the web browser, before

evaluating the information for adequate retrieval. In a traditional context, common criteria such as authority, scope, treatment, organisation, and special features can be used to secure access to quality documents that contain credible information. Therefore, reliability, authority, reasonableness, supporting system, cost, and copyright of online material are the minimum requirements for consideration in this instance ^[2]. This could be why polytechnic students require a very high level of ICT literacy skills to properly secure access and make judicious use of web-based information resources to enhance their peculiar academic tasks.

From preliminary investigation, many polytechnic students no longer visit the library, believing that they can acquire information from numerous websites by using varieties of search engines, especially Google comfortably from their own homes or place of residence. However, not all information available on the Internet is appropriate for academic use. Perhaps as a result of this, some polytechnic libraries have subscribed to numerous

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online databases in order to encourage students to visit the library on a regular basis in order to gain greater access to web-based material^[3]. Some Nigerian academic libraries have begun to offer direct subscriptions to electronic information resources that are domiciled on the web to enhance adequate access to web-based information resources rather than converting information into electronic form. In other words, libraries are becoming increasingly reliant on web-based resources available via the Internet due to the introduction and implementation of ICTs^[4].

Journals and other scientific publications are now available online, allowing access to online journal articles and publications from a variety of locations, including internet cyber cafés, private residences, e-libraries, friends' apartments, and departmental laboratories, in many cases for free^[5]. With this development, it is expected that students in higher education will have unrestricted access to web-based information resources from the comfort of their own homes, cyber cafés, religious institutions, using mobile devices, and a variety of other locations that students see as web-based information resource access points, such as polytechnic libraries.

According to^[6] the majority of students in Nigerian higher education institutions now have access to web-based information resources and use it to enrich their academic tasks via their mobile phones and laptops that use a modem as a router, with only a small percentage having access through their institution's ICT centers and e-libraries. However, access to web-based information resources became easier thanks to the Internet, which had a favourable impact on students' academic tasks. Similarly^[7] found that many students spent between 1 and 5 hours per day on their phones communicating with family and friends, and that only a small percentage of students used their phones for academic purposes in a study on smartphone use among Nigerian college students. Hence, the need for this study to investigate issues in use of web-based information resources by public polytechnic students in Southwestern, Nigeria.

2. Statement of the problem

The nature and value of information have changed dramatically since the turn of the twenty-first century, and this has influenced how each individual student lives, learns, and completes the various academic tasks. According to the literature reviewed, polytechnic libraries are underfunded, which affects subscriptions to both print and electronic information resources. As a result, students make private arrangements to obtain information via the Internet, using various ICT devices in various locations, including their homes. Despite this, many students frequently complain that the quantity of information on websites makes it difficult to access and use the exact information needed to meet a need. This could be attributed to the students' general lack of ICT literacy. Previous research has focused on universities,

but students in polytechnics also need to use web-based information resources. However, no previous research has been conducted in this area, particularly on issues relating to the use of web-based information resources by public polytechnic students in Southwestern Nigeria, which is the focus of this study.

3. Objectives of the study

The main objective of the study is to investigate recurring issues in use of Web-based Information resources by public polytechnic students in Southwestern Nigeria. However, the specific objectives are to:

- i. Find out the major search engines adopted by the students in public polytechnics in southwestern nigeria;
- ii. Identify the academic databases used to access web-based information resources for academic tasks by public polytechnic students in southwestern nigeria; and
- iii. Identify the challenges in the use of web-based information resources for academic tasks by public polytechnic students in Southwestern Nigeria.

4. Literature Review

The Information Age has resulted in print-based information products failing to cover all of a student's academic information needs, necessitating the accessibility and usage of web-based information in research and other academic tasks. Web-based information resources, according to^[8] can only be accessed and used through electronic systems and computer networks, or the Internet. Web-based information resources, according to^[9] are items that can be accessed remotely or locally over the Internet utilising a personal computer, mainframe, or portable mobile devices.

One of the needs of information resources utilisation is access to information materials. In a similar vein, the goal of use, user characteristics, and the environment in which information is used (point of access) determine utilisation; the medium of communication (devices used for access), infrastructure facilities and equipment, purchase cost, and time^[8,10]. Information resources accessible via the internet are only a means to an end. It is believed that students will be able to use the content for academic purposes if it is made available to professors in library schools. Because web-based information resources have the ability to quickly eliminate many of the information access barriers that exist in traditional libraries this is a good thing^[7].

The polytechnic library's main purpose is to provide people with access to the library's enormous collection of electronic materials, especially through the various websites to which the library subscribes. SDI in key research areas, effective reference services/personalized reference services, current awareness, library orientation, document delivery, blog

development, e-mail alerts, and interlibrary loan are all expected to improve access to web-based information resources ^[11]. Meanwhile, information sources are efficient if they provide users with relevant, important, and accurate information that can help them solve their problems. This suggests that web-based information resources accessibility refers to the simplicity with which a user may search for, locate, and retrieve information from a storage medium on the Internet.

For example, the access point could be at home, on the go, at a cyber café, or at the e-resource center of a library^[12]. To save time, readers prefer to select information sources that require the least amount of effort to reach. Readers want to choose information sources that demand the least amount of effort to access in order to save time. Essentially, the library should put user satisfaction first by subscribing to web-based information resources ^[10,12]. It is expected that well-organized and easily accessible information would save students time and effort in their research, as well as aid in the completion of good academic tasks.

The bulk of African countries have made little attempt to share information and knowledge across multiple websites. Despite the vast amount of material available in research institutes, universities, polytechnics, and other government agencies and libraries, students in higher education appear to have restricted access to it ^[12]. The lack of connections between researchers, research centers, non-profit organizations, libraries, and students is partly to blame for this scenario. Perhaps innovations for improving academic activity in impoverished nations have not reached or been embraced by their intended beneficiaries.

Students confront a variety of obstacles when it comes to using web-based information resources, including poor Internet connectivity, epileptic power supply, expensive access costs, download delays, trouble accessing some websites, and information overload^[13]. This suggests that the challenges described by ^[13] would also affect tertiary educational institutions' usage of web-based information resources, particularly in Southwestern Nigeria. Lack of understanding of web-based resources and insufficient computer terminals as points of access inside library environments were among the issues ^[10,14].

With the vast potentials embodied in the usage of web-based information resources, undergraduate students' capacity to utilise and harness the infinite advantages embedded to satisfy their information demands is hampered by a lack of essential abilities. In order to affirm this, low basic information literacy skills and competences are among the issues noted by ^[15] in the

adoption and use of web-based information resources. According to studies, undergraduate students have access to a variety of web-based information resources such as the Internet, databases, Telefax, CD-ROM reports, and electronic journals ^[10,15] listed the web-based information resources available in Nigeria, including the Internet, Online Databases, OPAC (Online Public Access Catalogue), and electronic Journals.

Students may not be able to utilise computers in some cases, and database utilisation may be poor due to a lack of understanding, lack of access to computers, insufficient training, and the high cost of service ^[16]. It could, therefore, be inferred that it is possible that the biggest roadblocks to using e-journals and other web-based information resources for some students, a lack of subscriptions in specialised subjects, a lack of user orientation/training, and a lack of bandwidth to increase the availability and efficacy of web-based resources.

From the literature reviewed, it was observed that some scholars brought up the unauthorised sharing of photographs on social media by students in an attempt to demonstrate the limitations of using web-based information resources. A great deal of attention has been made to the trend of students sharing naked and explicit images of themselves and their friends on websites like Flickr, or photos sent to them via mobile phones (dubbed "sexting"). These high-profile examples show how participation in the Internet environment can have far-reaching implications that are frequently unanticipated by the person involved^[10,14].

Students at tertiary educational institutions may face challenges such as inability to retrieve relevant materials, especially when searching by keywords; the various search methods across databases, which may be confusing to some students; and uncertainty about the comprehensiveness of searches due to a lack of knowledge about the subject coverage of some databases^[14]. Slow Internet connections when attempting to access web-based information resources from locations such as home, cyber café, or library; problems setting up Internet connections to access web-based resources; Other challenges include difficulty locating whole text articles because the library did not subscribe to the journals or the inability to obtain back issues since the library did not subscribe to the publications.

In a report published in Asia Pacific Institute of Advanced Research (APIAR) titled "Use of web-based information resources and services," ^[16] identified the primary barriers to searching, identifying, accessing, and using web-based information resources. The large volume of information available on the internet, according to Brar (2016), is a significant hindrance to

locating and obtaining essential information. To put it in another way, information explosion makes it difficult to find and utilise web-based information resources. Limited access to computer terminals, which can make it difficult to access and use web-based information resources, is another issue mentioned by Brar (2016), as is a lack of adequate knowledge of how to access web-based information resources. Insufficient computers and access points, inadequate Internet connectivity, incorrect usage, and a lack of relevant ICT skills, limit students' use of the Internet and other web-based information resources [13,15,16].

According to [17] the main barriers to using electronic information resources available through websites are slow Internet access speed, privacy concerns, an overabundance of information on the Internet, the difficulty in finding relevant information, the time required to view and download pages, and other factors [17]. In 2017 also mentioned network failure, a lack of IT awareness, congestion of the library's e-resources department and cyber café by students due to a limited number of available computers, and poor user interface design of several websites.

5. Methodology

A descriptive survey research design was used in the study. To ensure that at least one polytechnic is chosen from each of the six states in Southwestern Nigeria, an equal allocation method was used to choose three federal polytechnics at random from three different states out of four that offer HND programmes in Southwestern Nigeria, and three state polytechnics from the remaining three states in Southwestern Nigeria. Therefore, six (6) polytechnics out of the sixteen (16) accredited polytechnics offering HND programmes in Southwestern Nigeria were selected. The federal polytechnics that were involved in the study are Federal Polytechnic, Ede, Osun State, Federal

Polytechnic, Ilaro, Ogun State and Federal Polytechnic, Ado-Ekiti, Ekiti State while the state polytechnics that were studied include Lagos State Polytechnic, Ikorodu, Lagos, The Polytechnic Ibadan, Oyo State, and Rufus Giwa Polytechnic, Owo, Ondo State.

The population figures obtained from the institutions' registries for the 2021/2022 academic session are thirty thousand, seven hundred and sixty-eight (30,768). The main instrument for the study was a self-developed questionnaire that was pre-tested on 30 polytechnic students outside the study areas, with cronbatch alpha reliability coefficient (WBIR use for Academic Tasks ($\alpha=0.98$), and Challenges of WBIR Use ($\alpha=0.84$) scales). A total of one thousand, four hundred and sixty-two (1,462) copies of questionnaire that was used for data collection were administered personally by the researcher with the supports of six trained research assistants. However, one thousand three hundred and eighty-seven (1,387) copies were completed and returned on time, yielding a 94.9% response rate. To characterize demographic parameters and achieve objectives 1-4, descriptive statistics methods such as frequency count, mean, and standard deviation were used. The data for this study was coded and analyzed with the Statistical Package for Social Sciences (SPSS V. 25).

6. Results and Discussion

Questionnaire administration and return rate

The return rate on the number of questionnaires distributed throughout the six polytechnics is shown in Table 4.1. The questionnaire was distributed to respondents at the six polytechnics in a total number of one thousand, four hundred and sixty-two (1,462) copies. However, one thousand, three hundred and eighty-seven (1,387) copies were promptly completed and returned, resulting in a 94.9 percent response rate.

Table 1: Questionnaire administration and return rate

Name of institution	Questionnaire administration and return rate		
	Number Administered	Number returned	Response rate (%)
Federal Polytechnic Ado Ekiti, Ekiti State	141	133	94.3
Federal Polytechnic Ede, Osun State	182	175	96.2
Federal Polytechnic Ilaro, Ogun State	273	252	92.3
Lagos State Polytechnic, Ikorodu	311	300	96.5
Rufus Giwa Polytechnic, Owo, Ondo State	212	203	95.8
The Polytechnic Ibadan, Ibadan, Oyo State	343	324	94.5
Total	1,462	1,387	94.9

Table 2: Distribution of respondents per programme in each polytechnic

School	Name of institution						Total (%)
	Fed Poly Ado Ekiti (%)	Fed Poly Ede (%)	Fed Poly Ilaro (%)	LASPOTECH (%)	Rufus Giwa Poly, Owo (%)	The Poly. Ibadan (%)	
Agriculture	-	-	-	17 (5.7)	-	-	17 (1.2)
Applied Science & Technology	-	-	-	-	47 (23.2)	-	47 (3.4)
Applied Sciences	-	39 (22.3)	-	-	-	-	39 (2.8)
Business & Communication Studies	-	-	-	-	-	80 (24.7)	80 (5.8)
Business Studies	-	52 (29.7)	-	-	65 (32.0)	-	117 (8.4)
Communication & Information Technology	-	-	14 (5.6)	-	-	-	14 (1.0)
Engineering	31 (23.3)	-	51 (20.2)	48 (16.0)	43 (21.2)	63 (19.4)	236 (17.0)
Engineering Technology	-	38 (21.7)	-	-	-	-	38 (2.7)
Environmental Studies	28 (21.1)	46 (26.3)	37 (14.7)	36 (12.0)	-	55 (17.0)	202 (14.6)
Financial and Management Studies	-	-	-	-	-	82 (25.3)	82 (5.9)
Liberal & Comm. Studies	-	-	-	24 (8.0)	-	-	24 (1.7)
Management & Business Studies	37 (27.8)	-	-	113 (37.7)	-	-	150 (10.8)
Management Studies	-	-	93 (36.9)	-	-	-	93 (6.7)
Pure & Applied Sciences	37 (27.8)	-	57 (22.6)	25 (8.3)	-	-	119 (8.6)
Sciences	-	-	-	-	-	44 (13.6)	44 (3.2)
Social Sciences	-	-	-	-	48 (23.6)	-	48 (3.5)
Technology	-	-	-	37 (12.3)	-	-	37 (2.7)
N	133	175	252	300	203	324	1387

Thus, Lagos State Polytechnic, Ikorodu had the highest response rate (300 or 96.5%) as obtainable in Table 4.1a. However, information on the distribution of respondents per programme in each polytechnic is presented in Table 4.1b.

Many of the respondents (113 or 37.7%) in Table 4.1b were from the Lagos State Polytechnic's School of Management and Business Studies. Furthermore, 93 (36.9%) came from the Federal Polytechnic, Ilaro's School of Management Studies.

7. Demographic characteristics of respondents

Figure 1 is a pie chart that shows the respondents' ages, and Figure 2 shows the respondents' age range.

Majority of the respondents (709 or 51.1%) were HND I students while 678 (48.9%) were HND II students (Fig. 1).

Results in Figure 2 show that (953 or 68.7%) were between ages 19 - 23 years, 236 (17.0%) were between ages 24 - 28 years while 113 (8.1%) were between ages less than or equals 18 years.

This suggests that majority of the respondents were still in their active years of post-secondary school level of education since they were under ages 30 years as recognised by the Nigerian Youth Service Corps (NYSC) scheme.

Search engines adopted by the students in public polytechnics

Figure 3 is a pie chart on major search engines adopted by the students in public polytechnics in Southwestern Nigeria.

The students were asked to list the search engines that they use to search for web-based information resources for their academic tasks (Fig. 3). Majority of the respondents 709 (51.1%) listed Google as the major search engine used. Others indicated a combination of Google and other search engines like Google, and Bing (71 or 5.1%), Chrome, Google, and Operamini (71 or 5.1%), Google, and Operamini (75 or 5.4%). However, 319 (23.0%) of the respondents did not indicate any particular search engine of their choice. Therefore, it is reasonable to assume that Google is the primary search

engine used by public polytechnic students to find web-based information resources for their numerous academic tasks.

Academic databases used to access web-based information resources for academic tasks by public polytechnic students

Respondents provided information on various academic databases used to access web-based information resources for academic tasks and results were presented in Figure 4.

Figure 4 depicts information on several academic databases utilised by students in public polytechnics in southern Nigeria to access web-based information resources for academic tasks. Thus, wikipedia appears to be a common database/website used to access web-based information resources for academic tasks by students in public polytechnics in Southwestern Nigeria with a response rate of (136 or 9.8%). Similarly, 55 (4.0%) of the whole respondents listed Myschool.com as the database of their choice. However, 1,042 (75.1%) of the respondents did not list any particular academic

database. Therefore, it could be inferred that most of the respondents used Wikipedia.

Issues in the use of web-based information resources for academic tasks by public polytechnic students

Information on challenges of the use of web-based information resources by public polytechnic students in Southwestern Nigeria is presented in Table 4.10. Results show that most of the respondents indicated that one of the challenges of the use of web-based information resources is that access to web-based information resources is expensive (= 2.73). In the same vein, most of the respondents indicated that they experience delay in downloading web-based information resources (= 2.64). Similarly, majority of the respondents indicated inadequate ICT infrastructure (= 2.59). However, very few respondents indicated that they lack basic ICT use skills (= 1.90), lack of basic Internet search skills (= 1.95), and to find meaningful information on the internet is difficult (= 2.32).

Table 3: Challenges of use of web-based information resources by the public polytechnic students

S/N	Challenges	4 = Strongly Disagree	3 = Disagree	2 = Agree	1 = Strongly Agree	Mean ()	Std. Dev.
1.	Finding meaningful information on the internet is difficult.	373 (26.9)	420 (30.3)	377 (27.2)	217 (15.6)	2.32	.033
2.	Supply of epileptic electric power.	481 (34.7)	91 (6.6)	535 (38.6)	280 (20.2)	2.44	.160
3.	On the Internet, there is far too much information.	336 (24.2)	381 (27.5)	315 (22.7)	355 (25.6)	2.50	.117
4.	Access to web-based information resources is expensive.	314 (22.6)	169 (12.2)	485 (35.0)	419 (30.2)	2.73	.121
5.	Lack of basic Internet search skills.	437 (31.5)	704 (50.8)	128 (9.2)	118 (8.5)	1.95	.863
6.	Delay in downloading	259 (18.7)	355 (25.6)	402 (29.0)	371 (26.7)	2.64	.068
7.	Some websites are difficult to visit.	405 (29.2)	123 (8.9)	569 (41.0)	290 (20.9)	2.54	.119
8.	Inadequate Information and Communication Technology Infrastructure.	250 (18.0)	238 (17.2)	735 (53.0)	164 (11.8)	2.59	.917
9.	Lack basic ICT use skills.	761 (54.9)	174 (12.5)	283 (20.4)	169 (12.2)	1.90	.109
n = 1,387							

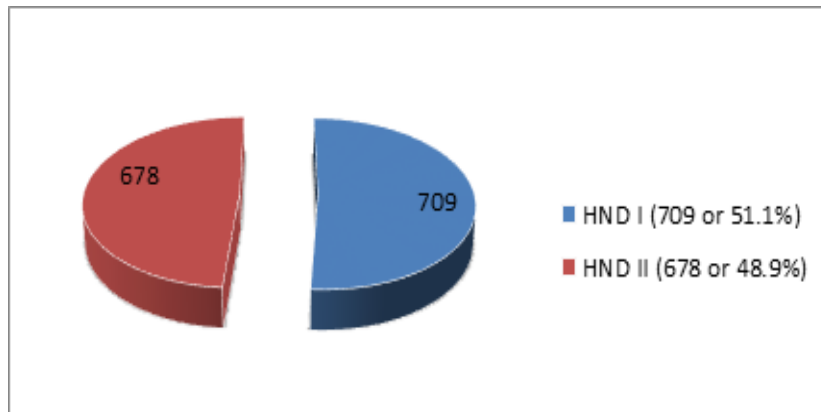


Figure 1: Respondents' level of study

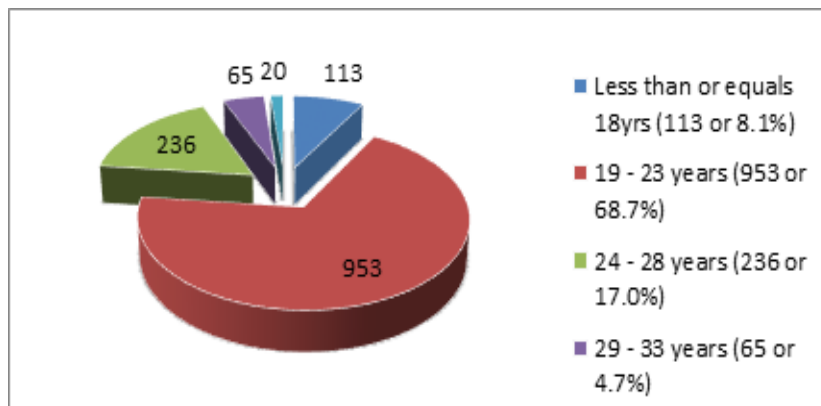


Figure 2: Age of the respondents

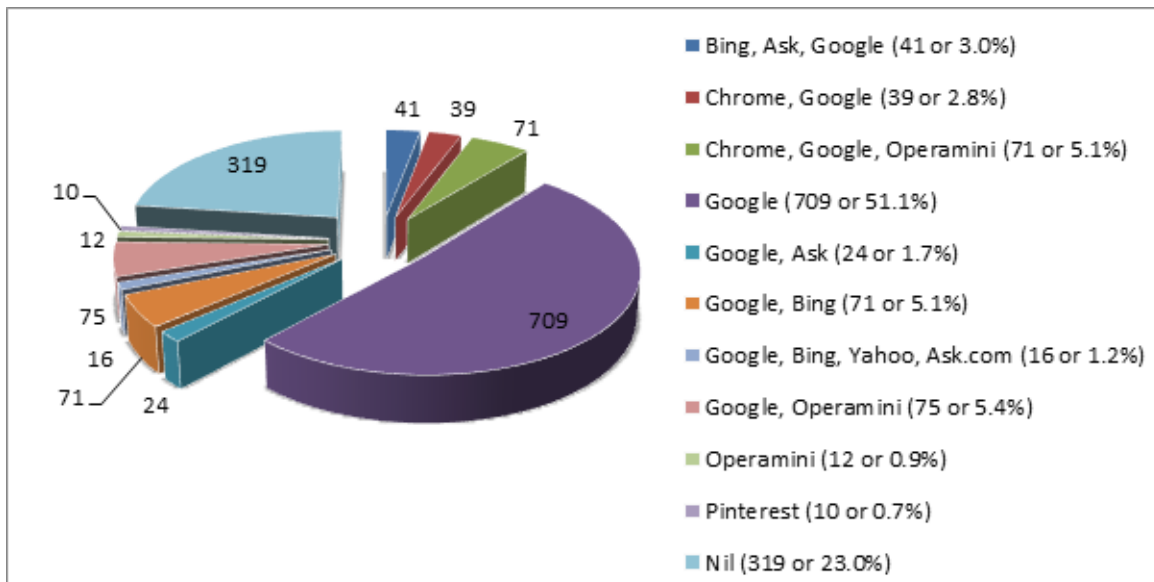


Figure 3: Search engines used by public polytechnic students in Southwestern Nigeria

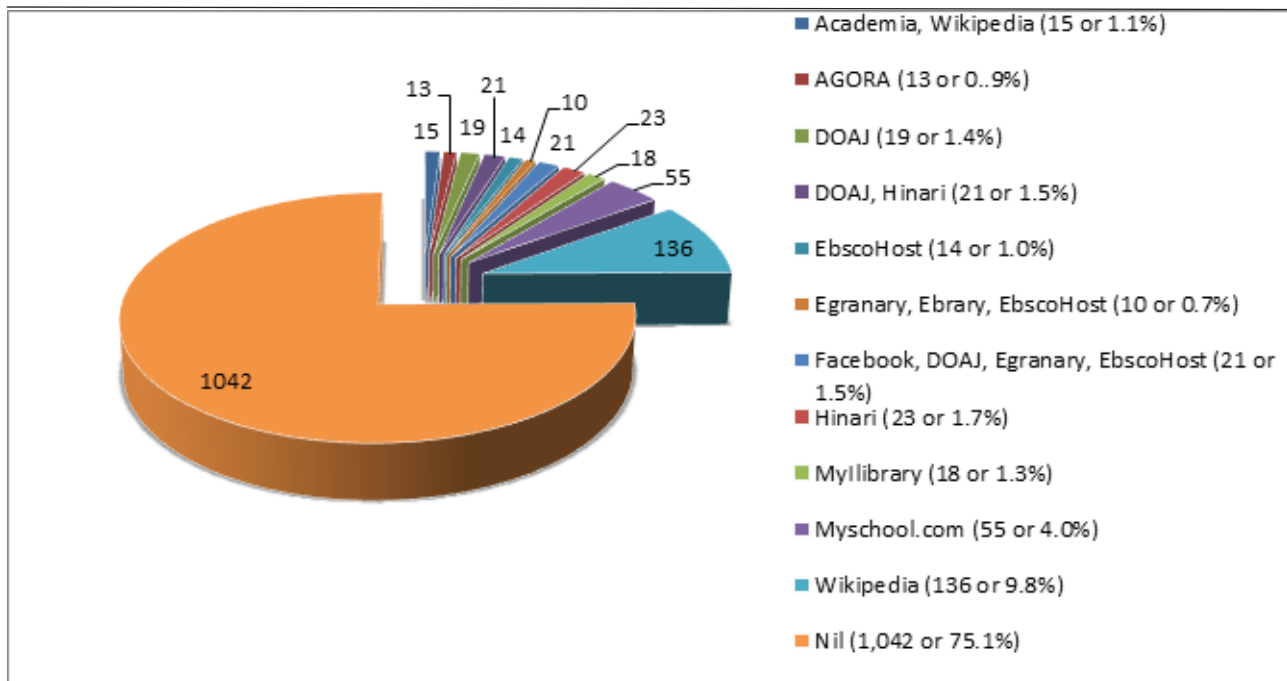


Figure 4: Academic databases used to access web-based information resources for academic tasks by public polytechnic students in Southwestern Nigeria

Therefore, it could be inferred that the main challenges of the use of web-based information resources by public polytechnic students in Southwestern Nigeria include: High cost of access to web-based information resources, download delay, inadequate ICT Infrastructure, difficulty in accessing some websites, too much information on the Internet.

8. Discussion of findings

Findings showed that Google is the primary search engine used by public polytechnic students to find web-based information resources for their numerous academic tasks. This corroborates [3] who submitted that students can acquire information from numerous websites by using varieties of search engines, especially Google comfortably from their own homes or place of residence.

Findings equally show that wikipedia is a common database/website used to access web-based information resources for academic tasks by students in public polytechnics in Southwestern Nigeria. This is in line [15] who listed the web-based information resources available and use in Nigeria, including web 2.0 technologies on the Internet, Online Databases, OPAC (Online Public Access Catalogue), and electronic Journals.

It was found out that the main challenges of the use of web-based information resources by public polytechnic students in Southwestern Nigeria include: High cost of access to web-based information resources, download delay, inadequate ICT Infrastructure, difficulty in accessing some websites, too much information on the Internet.

The findings back with [16] conclusion that the sheer volume of information available across websites is the most significant impediment to locating and getting the information desired. Slow Internet access speed, privacy issues, an overabundance of information on the Internet, the difficulty in finding relevant information, the time required to view and download pages, and other factors, according to Ankrah and Acheampong (2017), are the most significant barriers to using electronic information resources accessible through websites.

9. Conclusion

Public polytechnic students in Southwestern Nigeria used web-based information resources, especially obtainable through Google search engine and Wikipedia. The students face challenges such as inability to retrieve relevant materials, especially when searching by keywords; the various search methods across databases, which may be confusing to some students; and uncertainty about the comprehensiveness of searches due to a lack of knowledge about the subject coverage of some databases. In addition, insufficient computers and access points, inadequate Internet connectivity, incorrect usage search terminologies, and a lack of relevant ICT skills, are recurring issues that limit students' use of the Internet and other web-based information resources.

10. Recommendations

The following recommendations were made based on the study's findings:

1. Many polytechnic students are unaware that their institution's databases contain web-based information resources. Therefore, librarians must raise awareness in order to encourage students to use the polytechnic e-library center as their primary source of web-based information resources for academic tasks. Students, for example, may be made aware of the numerous academic databases to which the polytechnic libraries subscribe, and passwords may be provided.
 2. Information literacy programs at polytechnic libraries should not be taken lightly. Students will be able to navigate academic databases and websites in a variety of settings, including polytechnic e-library centers and devices, in order to access and use web-based information resources for academic tasks. Students could be taught how to access and use information resources in academic databases as part of the user education program.
 3. Lecturers at Nigerian polytechnic libraries should require their students to use electronic information resources in academic databases in assignments and term papers to encourage them to use web-based information resources. Students will be more likely to use the polytechnic libraries as a result of this. In this regard, academic databases contain a large number of web-based information resources that can assist students in completing high-quality academic projects.
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