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Evaluating the Information Access Skills of Students of a College of Education in Ghana

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ABSTRACT

Access to relevant information determines the quality of life of an individual in society and the academe. Academic institutions have established information literacy programmes to enhance students' access to information. With the elevation of colleges of education to tertiary status in Ghana, pre-service teachers are now required to conduct research to improve their reflective thinking in order to be certified. However, the information access skills of students in colleges of education in Ghana are uncertain. This study draws empirical evidence from students in the Nusrat Jahan Ahmadiyya College of Education, Wa, Ghana on their information access skills. Primary data were collected from 303 respondents from the college using a stratified sampling procedure. The data were collected using a questionnaire and analysed using descriptive statistics. The results indicate that information is available to students through different sources such as the Internet, libraries, and contact with friends and authorities. However, students were limited in respect to access to relevant online resources for their academic activities due to inadequate information access skills. Potential solutions are discussed.

Keywords: information access, information literacy, library use, internet access, college of education

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1. INTRODUCTION

Information seeking has become a significant component of general routine. The increasing capacity of information communication technologies (ICTs) for information generation and use has culminated in the need for the development of factors to determine information quality (Long & Shrikhande, 2007). In the field of academia, access to relevant information determines the quality of one's research output and relevance in the academic environment and society (Okon, Etuk, & Akpan, 2014). Information users are, therefore, concerned with what selection criteria to apply in choosing information sources (Taylor & Dalal, 2017). People, especially college students, obtain information from various sources and for different purposes. Similarly, schools and colleges also devise methods to expose students to different components of information skills (Abdul Karim, Shah, Din, Ahmad, & Khalid, 2013).

Libraries, especially university libraries, contain a diverse repertoire of information sources in the form of print, electronic, and audio-visual resources (Sasikala & Dhanraju, 2011). Today, school libraries enhance the development of creative skills among learners by facilitating access to information. Furthermore, libraries promote individualised access to varied modes of communication capable of supporting the critical thinking and problem-solving needs of a techno-centric generation. Omeluzor, Akibu, Dika, and Ukangwa (2017) indicate that academic libraries enhance the information backbone of universities through the development of an effective and efficient knowledge support system to achieve the lofty goals of the academe. Spenser (2003) also emphasises the teaching role of libraries, stressing the critical role of information literacy in developing students' skills at consuming information for the purpose of addressing learning and research needs.

1.1. Background to the Study

In Ghana, students at different levels have challenges in accessing and evaluating information. For example, Yeboah, Dadzie, and Owusu-Ansah's (2017) research on "information access and evaluation skills" of students of two secondary schools (Opoku Ware Senior High School and Yaa Asantewaa Girls' Senior High School) revealed that students in both schools could not effectively access information for their academic work due to their lack of basic skills in differentiating good information from bad. Besides this, with the elevation of the colleges of education to tertiary status in Ghana, pre-service teachers are now required to conduct research as part of the requirements to be awarded their diploma (Nyarkoh, 2016). This has increased their information access requirements, as they will need to explore new areas and conduct independent studies. However, the information access skills of college of education students in Ghana have not yet been identified and evaluated. This study draws empirical evidence from students in the Nusrat Jahan Ahmadiyya College of Education (NJACoE), Wa in the Upper West Region of Ghana on their information access and evaluation skills.

1.2. The Nusrat Jahan Ahmadiyya College of Education

The NJACoE started as a girls' academy and later became a mixed school. It was converted into a teacher training college in 1982 and awarded post middle certification. It was upgraded to a post-secondary institution in 1991 and later became a diploma awarding institution in 2004. The school is now a university college. Currently, the school runs three academic programmes: technical/mathematics, general/social science, and science/mathematics. The school has an ICT laboratory with over 100 computers for student use. The student population is 1,264 with 72 staff. Out of the 72 staff, 40 are tutors and 32 are supporting staff.

The school has a library facility with reference materials in fiction, non-fiction, physics, mathematics, chemistry, social studies, English language, biology, ICT, music, technical/vocational, education, general science, and miscellaneous (Nusrat Jahan Ahmadiyya College of Education, 2018). Apart from its print holdings of books, the college, however, cannot boast of standard academic library facilities and services. For instance, the library does not have computers to facilitate access to relevant educational databases. In addition, the library lacks qualified personnel who, among other functions, are responsible for providing training in online searching for academic literature to support teaching and learning. On the basis of this, it may be argued that the NJACoE library is typical of other college of education libraries in Ghana where library services are underdeveloped (Filson & Agyekum, 2014).

1.3. Objectives and Research Questions

The purpose of the study was to evaluate the information access skills of students of the NJACoE, a public teacher tertiary education provider in the Upper East Region of Ghana. The objectives of the study were to:

1. Explore the main sources of scholarly information of the students of the college.
2. Determine how the students accessed scholarly information from the identified sources.

The study was anchored on two important questions:

1. What constitutes the main sources of information for students of NJACoE?
2. To what extent are the information access skills of students of NJACoE adequate to help them conduct independent research?

2. LITERATURE REVIEW

This section explores the literature on the subject in particular respect to the following thematic areas: sources of information; traditional library sources; and Internet sources.

2.1. Sources of Information

In recent times, access to information for academic and other purposes is possible through different sources. In the view of Rieh and Hilligoss (2008), information users consult online search platforms, resort to expert knowledge sources and acquaintances, use libraries, and patronise traditional news sources such as newspapers and television for their information needs. Omeluzor et al. (2017) also suggest that classroom teaching is one of the methods through which students access information. Overall, students possess more knowledge in source identification, needs description, and awareness of potential sources (Abdul Karim et al., 2013). This may be attributed to most universities initiating information literacy programmes for the developing of these skills. In Nigeria, students often access information through the use of information and communication tools such as computers, mobile phones, and Internet (Adetimirin, 2012). A study by Taylor and Dalal (2017) on sex and information literacy identified two sources of information: traditional library sources and Internet sources. However, they indicated that although students used both information sources, they commonly choose the Internet over traditional library sources. The use of Internet sources is determined by relative access, and availability of facilities and services (Almarabeh, Majdalawi, & Mohammad, 2016).

Also, to broaden students' information access as well as to assist students to acquire the skills to differentiate good information from bad, it will be advantageous for institutions to turn their attention to promoting information literacy. This is exactly the position of Yeboah et al. (2017), who suggest the need for integration of information literacy into the curricula of Ghanaian secondary schools, and for librarians to collaborate with relevant stakeholders such as teachers and policy-makers. Similarly, most of the respondents in Shrestha's (2008) study suggest the incorporation of information literacy courses at different stages of higher education.

It has been suggested that the non-integration of information literacy in academic programmes has contributed to poor information literacy among students (Yeboah et al., 2017). In other words, information literacy retains a central role in the development of critical information skills among students in the current information society (Sasikala & Dhanraju, 2011). Shrestha's (2008) study suggested that information literate people are lifelong learners. According to Taylor and Dalal (2017), information literacy skills involve choosing the right sources of information through the application of relevant quality indicators. A study by Long and Shrikhande (2007) on information literacy and information seeking behaviour among business major students revealed that the set of teaching methods adopted for information literacy delivery culminated in considerable upgrade of information-seeking behaviour among undergraduate students. Additionally, Sasikala and Dhanraju (2011) vouched for the utilitarian role of information literacy as an indispensable skill. Okon et al. (2014) contend further that in the educational sector, this skill is useful for, among other goals, research completion and presentations in the university. Furthermore, students can evaluate information sources by checking for details such as the authority and qualifications of an author of a print book (Yeboah et al., 2017). Julien and Barker (2009) investigated high school students' finding and evaluation information skills. They found that despite unambiguous curricular mandates to develop the information literacy skills of students, their actual skill levels were underdeveloped. Adetimirin (2012) found poor information literacy skills among university students in Nigeria in his investigation of the ICT literacy of university students in Nigeria. To improve these poor outcomes, Yeboah et al. (2017) suggest the establishment of ICT centres in schools to enable students to access quality information to facilitate the development of information literacy (IL) skills among students (Long & Shrikhande, 2007).

2.2. Traditional Library Sources

Libraries have remained an important source of academic information (Yeboah et al., 2017). Academic libraries have the fundamental objective of supporting academic institutions by deploying a highly-effective knowledge-building model to obtain relevant information sources for the educational ideals of universities (Omeluzor et al., 2017). Similarly, school libraries enhance access to a variety of information modes and the concomitant expertise for children to exploit knowledge in all its shapes and forms (Sasikala & Dhanraju, 2011). Hence, Yeboah et al. (2017) are of the view that a school's timetable should have library periods to expose students to the use of library services and information resources to embark on independent learning (Yeboah et al., 2017).

However, the phenomenon of underuse of school libraries has been noted widely in the empirical literature. For instance, Chang et al. (2012) note that secondary school students in Singapore tend not to use the traditional library. Taylor and Dalal (2017) assessed sex and information literacy among college students and note that, overall, students commonly choose other sources of information over traditional library sources. It is argued that library instruction enhances students' ability and confidence to navigate the information search process (Omeluzor et al., 2017). Similarly, Spenser (2003) notes that library instruction helps students to build on their problem-solving skills by connecting their information search skills to their creative potential. Omeluzor et al. (2017) conclude by suggesting that quality instruction is an effective awareness-creation mechanism on the availability of information sources and their potential academic utility.

While students rely heavily on the Internet for information and communication, they also co-use subject experts outside libraries, print sources, and, to some extent, digital library resources (Rieh & Hilligoss, 2008). In this digital age, however, students sparsely depend on library resources, especially scholarly resources, for course-related research; and even fewer, in comparison, use services that require interfacing with human-mediated systems (Head & Eisenberg, 2009). Therefore, libraries are now adapting new approaches and methods in order to enhance information access among students. For instance, Adetimirin (2012) intimated that due to underfunding of university libraries, they were not self-sufficient in the provision of information to their users. Consequently, there was a need to leverage ICTs to complement available library resources to live up to the demands of users. ICTs also enhance the extent to which users can creatively exploit different information (re)sources to achieve standard goals (Omeluzor et al., 2017). It is, therefore, imperative for librarians to adopt viable innovative processes and programmes such as "Ask-a-librarian," blogs, library websites, social media, text messaging, emailing, and radio broadcasting to facilitate information access in libraries. Interestingly, Shrestha's (2008) study of the crucial role of information literacy in Nepal shows that a majority of respondents have used these electronic resources of the library.

2.3. Internet Sources

The technological landscape is evolving rapidly with products, programmes, and applications; these are impacting how individuals gather information, connect with peers, and interact in the classroom (BrckaLorenz, Haeger, Nailos, & Rabourn, 2013). Access to ICT facilities can greatly enhance students' access to information and ultimately result in improved IL competencies of students (Yeboah et al., 2017). ICTs encompass the Internet, computing, and electronic communications such as radio and television (Almarabeh et al., 2016). A study conducted in Andhra University by Sasikala and Dhanraju (2011) revealed the utilitarian value of ICT skills when using electronic information sources. In respect to the use of the Internet to access information, several studies support Taylor and Dalal's (2017) claim that among the traditional library and the Internet, students' most preferred source of information is the Internet. Adetimirin (2012) pointed out that the use of ICTs provides immense value in the information search process of students. With regard to the use of the Internet, Sasikala and Dhanraju (2011) found that the highest proportion of their respondents were conversant with Internet use. As indicated, almost all students use online search platforms such as Google and Wikipedia for everyday life, especially in their course reading (Head & Eisenberg, 2009). Yeboah et al. (2017) then indicated that the Internet is both an information and communication tool that can be helpful for obtaining academic information and exchanging ideas and information with peers and teachers. Additionally, Metzger, Flanagin, & Zwarun (2003) revealed that college students rely heavily on the Internet for both general and academic information. For instance, a case study in the University of Jordan by Almarabeh et al. (2016) on Internet usage, challenges, and attitudes established that, aside from academic and research studies, communication and entertainment as well as downloading of software were also noted as valuable uses of the Internet.

Among various reasons, Sasikala and Dhanraju (2011) indicated that students are using the Internet for text communication purposes and also to access information on jobs. Students overwhelmingly felt that technology has helped them to understand course materials and to demonstrate understanding and hence they were found to frequently use technology to study on their own (BrckaLorenz et al., 2013). According to Julien and Barker (2009), students prefer the Internet because it is perceived as convenient and familiar. They are also found to be familiar with online search platforms such as Google, email, and Wikipedia (Shrestha, 2008). Finally, in the view of Taylor and Dalal (2017), despite the mixed appreciation of the quality of the Internet as a credible information source for research, its use will continue and will likely increase.

3. METHODOLOGY

This section presents a description of the general procedures adopted in carrying out the study. The main issues covered

include the research design, population and sampling, data collection, and the methods of data analysis.

3.1. Research Design

A cross sectional survey was conducted to gather data for this study. The study applied a descriptive survey method with the aim of providing a good picture of students' access to information.

3.2. Population and Sampling

The population of the study consists of the current student enrolment in the NJACoE. The student population in the 2017/18 academic year is 1,264. This consists of 356 students in Level 100, 453 students in Level 200, and 455 students in Level 300.

The sample size for the study was estimated using a statistical procedure that was proposed by Yamane (1967). The formula is given as:

$$n = \frac{N}{1 + N(e)^2}$$

Where n=sample size; N=sample frame; and e=error or significance level. According to Ahuja (2011), an acceptable error level traditionally is up to ±0.05 or ±0.10 (i.e., 5 or 10 percentage point). In this study, N=1264, e=5%. Hence the estimated sample size for the study is

$$n = \frac{1264}{1 + 1264(0.05)^2} = 303$$

The sampling distribution according to stage/levels is shown in Table 1.

From Table 1, a total of 303 respondents were selected, consisting of 85 from Level 100, 109 from Level 200, and 109 from Level 300. A stratified sampling procedure was used in the selection of the respondents. The purpose of the stratification was to give a chance to students from different year groups to be included in the sample.

Table 1. Sampling distribution of respondents

Respondent category	Population	Proportion selected (%)	Sample size
Level 100	356	28.2	85
Level 200	453	35.8	109
Level 300	455	36.0	109
Total	1,264	100	303

3.3. Data Collection and Analysis

Primary data were collected from respondents using a self-administered questionnaire. The questionnaire consisted of three sections: Section one dealt with background information; Section two was on types of information; and Section three concerned sources and access to information. The respondents were identified and copies of the questionnaire were given to them and were retrieved, resulting in a 100% response rate.

The data were cleaned, coded, and entered into the SPSS spreadsheet for further transformation. The analysis was done using descriptive statistics. The frequencies of key variables were generated and their relative percentages estimated. The data were presented in tables to facilitate in discussing the findings.

4. RESULTS AND DISCUSSION

This section presents the results and discussion of the analyses. This includes background information of the respondents, the types of information they access, sources of information, and the relative access to information by the respondents.

4.1. Background Information of Respondents

It was discovered that 75.9% of the respondents were male students while the remaining 24.1% were female students. This means that male students dominate over female students in the college of education. Besides this, the respondents were found to be of a minimum of 17 years and a maximum age of 36 years old. Further statistics in Table 2 shows a mean age of 22.44 (years) with a standard deviation of 2.8. In terms of the programme of study, the results indicate that the students pursue three main programmes. From Table 2, 7.9% of the respondents

Table 2. Background information

Variable	Frequency	Percent
Sex		
Male	230	75.9
Female	73	24.1
Total	303	100
Programme of study		
Technical and mathematics	24	7.9
Science and mathematics	82	27.1
Social studies	197	65.0
Total	303	100

Variable	N	Minimum	Maximum	Mean	Standard deviation
Age	303	17	36	22.44	2.814

Table 3. Types and forms of information

Information	Frequency	Percent
Form of academic information		
Online/digital	89	29.4
Printed information	214	70.6
Total	303	100
Form of social information		
Online/digital	214	70.6
Printed information	89	29.4
Total	303	100

pursue technical with mathematics, 27.1% pursue science with mathematics, while the remaining 65.0% study social studies.

4.2. Types of Information

The results indicate that students often use academic and social information. Academic information represents all information needs for academic exercises while social information is information needs for social purposes other than academic. The types of information needs are often accessed through online/digital form or in a printed form. The results in Table 3 revealed that 29.4% of the respondents often use online or digital information for academic purposes. Besides this, 70.6% of the respondents often use printed forms of information for academics. This means that the students prefer (are more conversant with) printed forms of information rather than online/digital forms of information. In terms of information needs for social purposes, the results indicate that 70.6% often use online/digital information while only a small proportion (29.4%) use printed information for their social needs.

The results also imply that when it comes to academic information the students rely greatly on printed forms but use more online information for their social needs. This suggests that the use of online information sources for academic purposes among the students is low. This result is corroborated by previous researchers (Owusu-Ansah, Rodrigues, & Van Der Walt, 2018) who found overwhelming preference for print books among teachers studying through distance learning.

4.2.1. Sources and access to information

The respondents were asked to indicate their specific sources of information, and multiple responses were provided as shown in Table 4. From the findings, the main sources of information include online search platforms (including Web search engines) (49.2%), authorities (such as authors and tutors) (23.4%), friends (45.9%), the college library (35.3%), newspapers (22.1%), and television (54.8%).

Table 4. Sources and access to information

Variable	Frequency	Percent
Sources of information (to students)		
Web search engines	149	49.2
Authorities	71	23.4
Friends	139	45.9
Libraries	107	35.3
Newspapers	67	22.1
Television	166	54.8
Total	303	100
Medium used to access information		
Computers	14	4.6
Mobile phones	235	77.6
Direct contact with source	54	17.8
Total	303	100
Frequency of using online search platforms		
Twice or more in a day	76	25.1
Once in a day	22	7.3
Once in a week	37	12.2
Once in month	130	42.9
Occasional	38	12.5
Total	303	100

Table 4 revealed that several devices and or methods of access were being used by students to access information. The findings show that 4.6% of the students rely on the use of computers to access information, and 77.6% rely on the use of their mobile phones, while 17.8% rely on direct contact with non-digital sources. Some of these non-digital sources include print formats such as books, journals, newspapers; and personal sources.

Results on the frequency of information search using online search platforms were obtained in multiples responses. The results indicate that 25.1% of the respondents use online search platforms to search for information twice or more in a day, 7.3% use them once in a day, 12.2% use them once in a week, 42.9% use them once in a month, and 12.5% use them occasionally. This suggests that information use (with reference to online search platforms) among the students was not regular.

Consistent with past studies such as those by Rieh and Hilligoss (2008) and (as well as) Omeluzor et al. (2017), this study confirmed that students rely on various sources for information such as the use of online search platforms, and consulting authorities together with the use of library resources. The use of different sources of information will widen their information access while exposing them to different perspectives in relation (argument) to a particular subject. This is an improvement in information access over traditional

methods because of the relative convenience that characterizes the use of technology.

It is also important to point out that the participants indicated television as a major source of information, indicated by more than half of the participants (54.8%). The question to ask is whether television as a source of information is used to obtain information related to the students' academic work. As noted by Philo (2014), television remains the main source of information for most people on contemporary events. Despite this, it is interesting that students at a university would consider television as more important a source than libraries, as there remain questions of credibility of information in even the traditional mass media (Philo 2014). Perhaps students in this institution are not satisfied with the information provision in their library, or they lack adequate information search and access skills to take advantage of the enormous volume of information online. Regardless of these postulations, it is necessary that the role of television in information provision to students be explored in the future.

4.3. Use of Traditional Library Sources

Traditional libraries have been sources of relevant academic information to students in different parts of the world. The respondents in this study were, therefore, asked to indicate whether they use the college library. The results indicate that 62.0% had been using the college library to access relevant academic information while 38.0% maintained that they do not use the library resources in the college. When asked to indicate the use of electronic resources in the library, the results revealed that only 20.1% of the respondents used the electronic resources of the library, a result which is very indicative of low patronage of electronic resources in the library.

Table 5. Use of traditional library resources

Variable	Frequency	Percent
Use of college library		
Yes	188	62.0
No	115	38.0
Total	303	100
Use of library electronic resources		
Yes	61	20.1
No	242	79.9
Total	303	100
Learning to use library resources		
Through the assistance of library staff	76	25.1
Through friends who know how to use the library	93	30.7
I usually find what I want but with frustration	28	9.2
I know how to search for library materials	106	35.0
Total	303	100

Further evidence reported how the students learned to use the library resources. The multiple responses in Table 5 revealed that 25.1% learned to use the library through the assistance of library staff, while 30.7% through their friends who were conversant with the system, and 9.2% often used the library on their own but not without frustrations. However, most (35.0%) maintained that they were conversant with the library and hence were able to use the library without any assistance. This finding is consistent with previous findings of electronic resources usage in Ghana.

The results also imply that the college library has been very useful to students in educating students to access relevant academic information. This is in line with Spenser (2003) who concluded that library instruction enables users to identify and use information to address issues at hand. However, students encounter challenges in their efforts to use library resources. For example, 79.9% of the respondents were not using electronic resources and hence could not be described as educated on how to use electronic resources from the library. On the other hand, a considerable number of users could not access needed information without assistance (55.8%), while 9.2% who reported their ability to use library resources independently complained of frustration. These findings suggest little or no library user education among the students, and as previous research suggests (Adeleke & Emeahara, 2016; Adeniyi Aderibigbe & Adebimpe Ajiboye, 2013), low user education militates against students' ability to use library-based electronic resources.

A question was also posed to students on the use of library catalogues for information access in the college. Library catalogues that are still in use in higher educational institutions in Ghana include bibliographic catalogues, card catalogues, and online public access catalogues. This question was intended to find the perception of students on the usefulness of library catalogues as useful information access tools. From Table 6, multiple responses from the students were that 25.7% consider the bibliographic catalogue as convenient in information access, 16.2% consider the card catalogue an easy way of accessing information, and 33.3% prefer the online catalogue for information access. It was also discovered that 38.6% had no idea regarding the use of library catalogues. With the considerable number of students (38.6%) who were unaware of any type of library catalogue in the library, it could be pointed out that either the library had no library catalogue or that they had but it was not publicised among the students. As noted

by Yang and Hofmann (2010), the library catalogue could be a gateway to all the resources of the library and as such its availability in a library, awareness among students, and readiness to use it can contribute significantly to increasing the use of library resources, including physical and electronic publications owned or accessible through a library.

When asked whether user orientation was essential in information access, especially in library use, 93.7% of the respondents confirmed in the affirmative that they considered user orientation to be essential in their ability to use library resources. Further evidence suggests that 41.3% of the respondents considered user education on library activities to be valuable. Also, 48.2% of the respondents maintained that there should be a guide to the location of relevant academic information in the library; 38.3% indicated that there should be user manuals for the library; and 25.1% indicated that there should be provision of a guide to facilitate the use of the library catalogue. The finding that most students considered user orientation essential to their ability to use library resources was re-echoed in previous studies. Murphy and Black (2013, as cited in Daniel, 2016) indicated in their study that most students found it difficult to access the library guides in their school's learning management system, although among those who found it and used it, they appreciated the fact that the library guide helps them to get started when they were to complete their assignments, as well as enhancing their ability to find important research materials to complete their assignments. There was therefore a call for promotional efforts to create awareness of the potency of library guides in increasing library use.

Table 6. Use of library catalogues to information access

Variable	Frequency	Percent
Bibliographic catalogues	78	25.7
Card catalogues	49	16.2
Online catalogues	101	33.3
Have no idea	117	38.6
User's orientation essential in information access		
Yes	284	93.7
No	19	6.3
Total	303	100
Type of user's orientation preferred		
Briefing in school activities	125	41.3
Guide to the location of resources	146	48.2
Use of manuals	116	38.3
Providing guide to catalogue	76	25.1

The results further suggest that students have admitted their unfamiliarity with the library resources and hence suggest the need for user orientation. This also means that despite their unfamiliarity with the library resources, they understand that it still represents a useful source of academic information. The requirement for college of education students in Ghana to conduct their own research, as indicated by Nyarkoh (2016), had not been met in this study because of students' relative challenge in information access.

4.4. Use of Internet Sources

Students now consider Internet technology a useful mechanism for accessing academic and social information. They achieve this through the use of different online search platforms such as Google, Yahoo, MSN, Google Scholar, Ask, and Bing. The respective frequencies and proportions of students using these online search platforms are shown in Table 7. The findings show that a majority (72.9%) of them use Google to access their needed information. Also, another (widely) fairly used search engine is Yahoo, which is used by 15.8% of the respondents.

The respondents were again asked to rate the effectiveness of the online search platforms used in accessing information. The responses in frequencies and percentages are shown in Table 8. From the table, 43.6% maintain that Google is very effective in information access, and 32.3% indicated that it is effective, while 22.8% said it is somewhat effective. Only 1.3% maintained that Google is not an effective search engine. Beside this, the students also gave a good rating to Yahoo with 21.8%, with 40.3% indicating that it is very effective and effective, respectively. However, the other online search platforms such as MSN and Google Scholar, as shown in Table 8, were not given good ratings by the respondents in terms of their effectiveness in accessing needed information.

The results imply that the numerous several online search platforms available have not all been widely used. The main reason is that their relative effectiveness in searching for needed

Table 7. Use of different online search platforms

Online search platform	Frequency	Percent
Google	221	72.9
Yahoo	48	15.8
MSN	9	3.0
Google Scholar	8	2.6
Ask	16	5.3
Bing	1	0.3
Total	303	100

Table 8. Effectiveness of online search platforms in retrieving information

Search engine	Very effective	Effective	Somewhat effective	Not effective
Google	132 (43.6)	98 (32.3)	69 (22.8)	4 (1.3)
Google Scholar	34 (11.2)	76 (25.1)	163 (53.8)	30 (9.9)
Yahoo	66 (21.8)	122 (40.3)	87 (28.7)	28 (9.2)
MSN	41 (13.5)	43 (14.2)	168 (55.4)	51 (16.8)
Ask	40 (13.2)	64 (21.1)	56 (18.5)	143 (47.2)
Bing	32 (10.6)	67 (22.1)	37 (12.2)	167 (55.1)

Values are presented as number (%).

information varies considerably. Google and Yahoo are more often used because of their relatively higher effectiveness, ease-of-use, and user-friendliness (Kwadzo, 2015). However, it is surprising that Google Scholar was not considered a major important source of scholarly information by the participants. This may be a result of their lack of awareness of the pre-eminence of Google Scholar to search across different platforms to provide openly accessible information, which may be critical to institutions where there is limited or no access to subscription/paywalled models for information access.

5. CONCLUSION AND RECOMMENDATIONS

Access to information is very critical in the academic performance of students. As a result, students often rely on using both purely academic literature as well as social media information to supplement their academic information. The results of this study imply that students use a variety of sources to access information. These sources span traditional (library) and Internet, formal (authoritative), and informal sources of information. However, the uses of these vary in intensity and type of information. The use of traditional library sources is more effective than all the other sources of information, but on the other hand their use is limited because of unfamiliarity with library facilities. Besides this, the findings of this study suggest that the inability of students to access information from various sources means that their information literacy skills are low. The students largely cannot access relevant electronic information thus giving them a limitation on information access. This implies further that they will have challenges in conducting empirical research in line with their curriculum requirements.

On the basis of the results, it is recommended that the information literacy skills of students of the NJACoE in Ghana be improved. This is necessary because they are relatively weak in their ability to access scholarly information. To achieve this goal, the management of the college should consider implementing and integrating information literacy in their institution's academic curriculum to enhance the information skills of their students to fulfil the empirical research components of pre-service teacher education. Information literacy as a course will afford students of the college to acquire four basic skills: Identify and conceptualise their information needs; locate credible sources of information; improve their search skills; and enhance their evaluation skills. Finally, in order to enhance students' access to quality and credible information resources, the college should seek membership in the Consortium of Academic and Research Libraries in Ghana (CARLIGH) to have access to electronic databases and journals subscribed to by the consortium. This would also expand the institution's access to critical information required for academic research by both students and faculty. Finally, to improve the students' information access skills, adequate provision of information in the traditional format must be made, while enhancing their online searching skills.

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