

Undergraduates' Needs and Seeking Behaviour: A Preliminary Study

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Abstract: Information seeking behaviour refers to the process of how individual identify their information needs, search and use the information identified to support their work. Understanding the needs and seeking for information from different types of information sources is very important to student in completing their research activities. This paper presents findings from a preliminary study of undergraduate students' information seeking behaviour and their need of information for their research project. The aim of this study is to identify their information seeking behaviour in finding the required information that meet their information needs. A survey was carried out and thirty nine final year students from two related Information Technology (IT) programs in a Higher Learning Institution in Malaysia returns the questionnaires. Findings indicate that information about development tools was the most important information needed by the students for finishing research project. In searching for required information, Google search engine was found to be the most widely used by the students. Furthermore, most students preferred to use the electronic information sources to search information due to the variety of information available on the Web.

Keywords: *Information needs, information seeking, information behaviour, information search, undergraduate*

1. Introduction

Information is important for students' academic achievement. They required the information in order to fulfil their knowledge gaps and academic needs. However, the increase of information on the Web has affected students' behaviour in seeking information. In seeking for information effectively and efficiently, students' understanding of their information needs and different types of information sources that can be utilized is very important. "The approach involved in retrieving the relevant information or also known as the information seeking behaviour should begin with identifying the needed information. This is followed by selecting the appropriate sources of information and finding the required information by using selected strategies" (Nadzir & Salim, 2013: p168). However, there are students who are unfamiliar with this approach. The problem must be addressed and a study on students' information seeking behaviour need to be conducted in order to assist students in finding the required information that meet their information needs. This paper discusses past research on information seeking behaviour and a preliminary study that was conducted to explore undergraduate students' information seeking behaviour.

Information seeking behaviour: Information seeking behaviour includes information needs, the use of information sources to retrieve information and ends with the use of the retrieved information (Williamson et al., 2007). George et al. (2006) defines information seeking behaviour as graduate students' behaviour when obtaining and using information for their research processes. According to Shakeel and Vinayagamoorthy (2013), information seeking behaviour relates with determining information needs, information searching behaviour and use of information. In the context of this study, the term, information seeking behaviour refers to the behaviour of undergraduate students during the processes of seeking information for their research project. The term refer to the processes of identifying the needed information for the research project, using selected information sources to search for the required information and using the required information accordingly in finishing the research project.

Related works: A survey on students' information-seeking behaviour in digital environment was conducted by Bhatia and Rao (2011). It was found that less than fifty percent of the respondents at Dev Samaj College were not aware of the availability of e-resources. The students, who were aware of e-resources, accessed the e-resources for updating their knowledge and seeking information for academic assignments. According to

Che Rusuli et al. (2013), majority of undergraduate students at Universiti Tun Hussein Onn preferred library books, lecture notes and handouts and textbooks as references in their studies. The study showed that the students “probably did not know how to utilize the information available on the Internet which might be useful and related to their assignments.” A survey by Shakeel and Vinayagamoorthy (2013) examine the information seeking behaviour of business students in Academic City, Dubai. The survey showed that academic related information was the main reason for students’ information needs. The survey revealed that the most important sources of the academic information were Internet and electronic resources. Therefore, the digital resources have a significant impact on information seeking behaviour of the majority of students. A recent study on students’ information seeking behaviour has been conducted by Oyadeyi (2014) at Ondo State University of Science and Technology revealed that assignment, examination, seminars and workshops were among the factors that influence students’ information seeking behaviour. The study also found that the most preferred and used information sources were Internet, lecture notes, text books and handout.

Information literacy skills have been identified as important skills in information seeking activities. Some information seeking behaviour studies have been conducted to investigate the level of information skills among undergraduate students. For example, Kimani (2014) examines information literacy skills and competencies among new undergraduate students in Catholic University of Eastern Africa. The findings of survey indicated that new undergraduate students have limited knowledge of strategies used to search for information, possess computer skills to use word processing applications, statistical package and internet applications. The study also found that majority of new undergraduate students was not familiar with various retrieval tools and their applications. Another study by Wu & Yeh (2012) looked at the relationships between computer competences and usage of library electronic collections. The computer competences was measured using four constructs: internet connection (ability to set up internet connection); software installation (ability to install software); document management (ability to manage document); current awareness (ability to use subscribe to current awareness service). Careful analysis and findings indicate that students were not confident that they could master the competences needed to use library electronic resources. Furthermore, the findings show that computer science students possessed more computer competences to use library electronic resources than Literature and Sociology students. This was due to their daily internet usage and their subject backgrounds (Wu & Yeh, 2012).

2. Methodology

The participants in this preliminary study comprised of 39, 2014/2015 session final year students from Bachelor of Science in Information Technology with Honours [B.Sc.(Hons) (IT)] and Bachelor of Science in Multimedia with Honours [B.Sc.(Hons) (Multimedia)] at Universiti Utara Malaysia (UUM). Students from both programs take a two-semester project based module to fulfil their credit hours for graduation. The objective of the module is to equip students with the theoretical and practical knowledge in information system development. At the end of the two-semester module, the students are required to produce an information system. In the first semester, the students are expected to write a proposal for the proposed system and produce a paper prototype while in the second semester, the students will continue with developing a complete system. A self-administered questionnaire was developed to collect data for this study. The questionnaires comprise of three sections: (i) demographic information; (ii) information skills, and (iii) information seeking behaviour. Information skills are measured by the ability to: a) recognise the type of information needed; b) determine appropriate information sources; c) use online public access catalogues (OPAC); d) use online databases; e) use search engine; f) use keywords for searching; g) determine the relevancy of information; and h) selecting relevant information. The following Likert scale representing the degree of agreement has been used: 1 = strongly disagree; 2 = disagree; 3 = somewhat agree; 4 = agree, and 5 = strongly agree. The total score is calculated and converted to percentages. The following formula is used to calculate the percentages of the total score for each respondent:

$$\text{Total score (percentage)} = \left(\left(\sum_{i=1}^n Si \right) / 4 \right) \times 100$$

Where Si is the perspective value given by the respondents for each measure and n represent the number of measure. The percentage is then compared to the following competency level:

Table 1: Information skills competency level (adopted from: Szarina et al., 2006)

Total Score (percentages)	Competency level
< 60%	Beginner
< 75%	Intermediate
> 75%	Advanced

The questionnaires were given to course representatives to be distributed to the respondents at the end of a compulsory lecture enrolled by them. Then, the data obtained from the survey were analysed using Statistical Package for Social Sciences (SPSS) for Windows version 19.0. Finally, descriptive statistics analysis was used to analyse the data in the study.

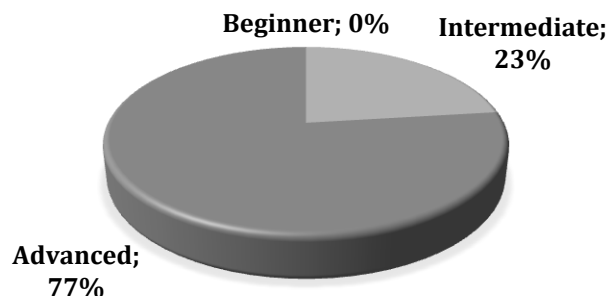
3. Results and Discussion

The survey involves 39 undergraduate students, comprising of 37 females and 2 males. As shown in Table 2, the majority of the respondents were Malays ($n=29$ or 74.4%) and most of the respondents were [B.Sc.(Hons) (IT)] students ($n=24$ or 61.5%) while the others were [B.Sc.(Hons) (Multimedia)] students ($n=15$ or 38.5%).

Table 2: Demographic information

Demographic item	Frequency ($n = 39$)	Percentage ($n = 39$)
Gender		
Female	37	94.9
Male	2	5.1
Race		
Malay	29	74.4
Chinese	2	5.1
Indian	2	5.1
Bumiputra (Sabah/Sarawak)	5	12.8
International student	1	2.6
Programme		
B.Sc. (Hons) (IT)	24	61.5
B.Sc.(Hons)(Multimedia)	15	38.5

In this study, analysis to identify information skills competency among the survey respondents has been conducted. The analysis, illustrated in Figure 1 revealed that most of the students (77%) surveyed are those with advanced level of information skills while the others (23%) can be categorized as having intermediate competency.

Figure 1: Information skills

Undergraduates' Information Needs: The types of information needed by the undergraduate students are identified based on analysis of the feedback from the questionnaire. As shown in Table 3, 51.3% students responded that information about development tools is very important and 43.6% of them considered the same information as important. Therefore, the information considered as the most important information

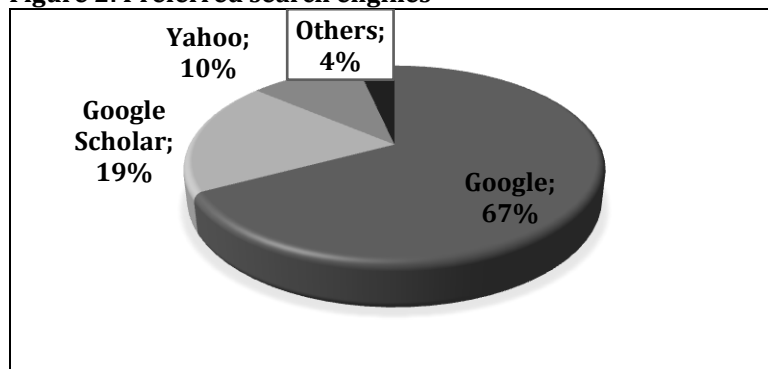
needed by the students was information about development tools. On the other hand, the type of information that received the lowest percentage and is considered less important by the students is information on how to do literature review. Only 38.5% of the students responded that the information is very important for them in order to carry out their research project. One explanation for these findings might be related to the activities involved in the project-based module. Since the main activity in the module is to develop an information system, students might spend more time looking for information about development tools; hence perceive that this information is important. On the other hand, student might think that literature review activity in an information system development project is less demanding, hence perceive that this information is less important. However, to get a clear picture of the issues, a qualitative study will be conducted to explore this issue in more depth.

Table 3: Information needs

Types of information	The importance of the type of information needed				
	not important	least important	somewhat important	important	very important
Information on how to do literature review	0 (0.0%)	0 (0.0%)	3 (7.7%)	21 (53.8%)	15 (38.5%)
Information on how to prepare a project proposal	0 (0.0%)	0 (0.0%)	4 (10.3%)	17 (43.6%)	18 (46.2%)
Information on how to do citations	0 (0.0%)	0 (0.0%)	3 (7.7%)	20 (51.3%)	16 (41.0%)
Information on how to do data collection	0 (0.0%)	0 (0.0%)	4 (10.3%)	15 (38.5%)	20 (51.3%)
Information on how to do data analysis	0 (0.0%)	0 (0.0%)	2 (5.1%)	19 (48.7%)	18 (46.2%)
Information on how to develop a system	0 (0.0%)	1 (2.6%)	2 (5.1%)	16 (41.0%)	20 (51.3%)
Information about development tools	0 (0.0%)	1 (2.6%)	1 (2.6%)	17 (43.6%)	20 (51.3%)
Information about preparing a project report	0 (0.0%)	0 (0.0%)	3 (7.7%)	16 (41.0%)	20 (51.3%)

Undergraduates' Seeking Behaviours: As illustrated in Figure 2, most students prefer to use Google as the main search engine when searching for information. Another two search engines and tools mostly used by the students were Google Scholar (19%) and Yahoo (10%). These findings were consistent with the results of previous studies which found that Google and Google Scholar were the search engines mostly used by students in order to find information on the Web (Vezzosi, 2009).

Figure 2: Preferred search engines



Final year undergraduate student are expected to be an active information seekers in order to find information relevant to their research needs for completing their research project. Figure 3 shows the findings of this study on the frequency of searching information for research project. As expected, majority of the students (24 students) searching for the required information daily to fulfil their research needs.

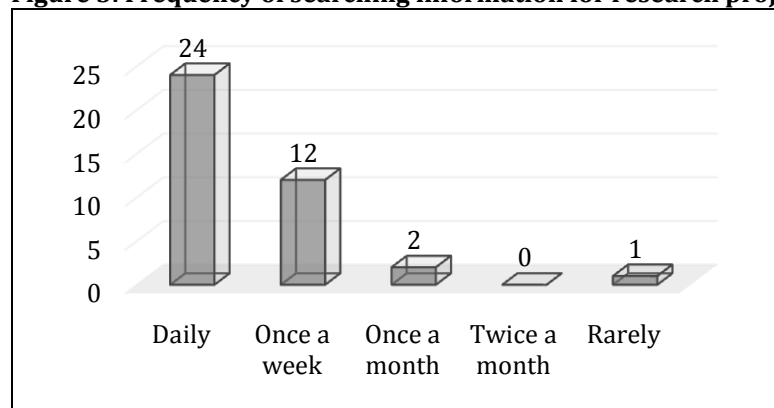
Figure 3: Frequency of searching information for research project

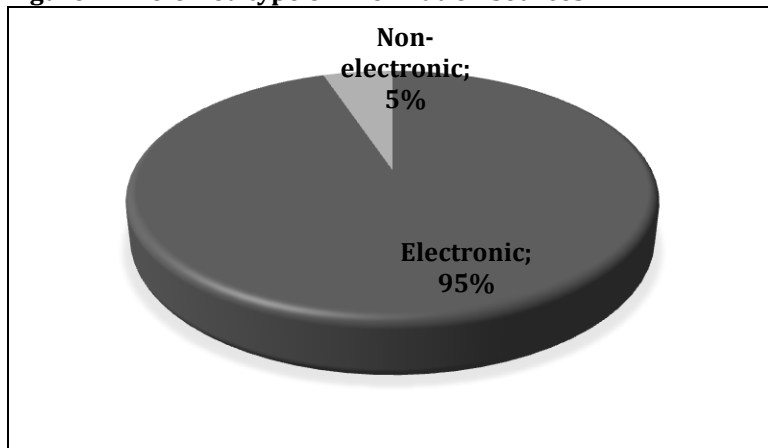
Table 4 indicates that the most problematic searching situation for the students when searching information for research project is when the materials are not available at UUM library. As shown in the table, 15.4% students responded that materials are not available as very problematic situation and 30.8% of them considered the same situation as problematic. The least problematic searching situation is when the students unable to retrieve search results from Online Public Access Catalogue (OPAC).

Table 4: Information search problems

Searching problems	The seriousness of the searching problems				
	not problematic	least problematic	somewhat problematic	problematic	very problematic
Incomplete information materials	1 (2.6%)	4 (10.3%)	19 (48.7%)	10 (25.6%)	5 (12.8%)
Unable to retrieve search results from OPAC	1 (2.6%)	6 (15.4%)	19 (48.7%)	11 (28.2%)	2 (5.1%)
Unable to retrieve information from online databases	3 (7.7%)	6 (15.4%)	16 (41.0%)	12 (30.8%)	2 (5.1%)
Limited knowledge on how to use electronic information sources	2 (5.1%)	8 (20.5%)	14 (35.9%)	11 (28.2%)	4 (10.3%)
Materials are not available	2 (5.1%)	7 (17.9%)	12 (30.8%)	12 (30.8%)	6 (15.4%)
Information scattered in too many sources	5 (12.8%)	8 (20.5%)	15 (38.5)	6 (15.4%)	5 (12.8%)
Out dated information materials	2 (5.1%)	11 (28.2%)	10 (25.6%)	11 (28.2%)	5 (12.8%)
Too much information on the Internet	9 (23.1%)	10 (25.6%)	15 (38.5)	2 (5.1%)	3 (7.7%)

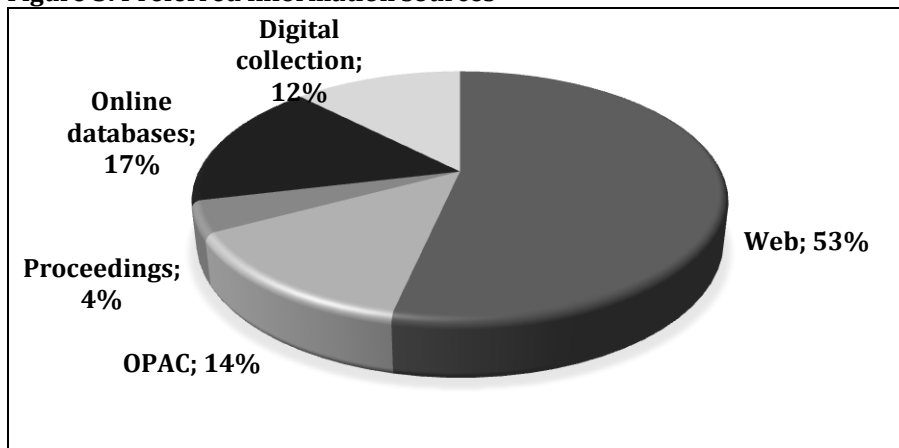
The finding of this study is similar with Singh and Kumari (2013) who identified that the main problem faced by students when searching for information was the unavailability of required materials in the library. There are a variety of information sources that have the potential to be used in assisting students to solve problems and get new ideas for research project. Students should be aware of various sources of information available and the type or feature of its content. The findings of this study revealed that students are aware of the variety of information sources available. However, most of them (95%) prefer to use electronic information sources to search information. Students prefer electronic information sources because of its convenience and availability of comprehensive and up to date information.

Figure 4: Preferred type of information sources



The students were also asked about their preferred electronic information sources. As shown in Figure 5, the Web was the most utilized information sources. The students preferred to use the Web because of its accessibility and ease of use. They can use the Web anywhere, anytime as long as there is an Internet connection. The findings of this study support previous studies results which showed that the Web is one of the electronic information sources most frequently used in the process of searching for information.

Figure 5: Preferred information sources



4. Conclusion

In this study, information seeking behaviour comprises of identifying the needed information for a research project, finding the required information using selected information sources and using the retrieved information with the intention of finishing the research project. The findings of this study revealed that information about development tools was the most important information needed by the students for finishing research project. In searching for the required information, most of the students prefer to use Google search engine to search through the Web due to the variety of information available on the Web. It is anticipated that the findings of this study could shed light into further research on modelling undergraduate students' information seeking behaviour in the electronic environment. The findings can also be used as initial guidelines for lecturers and librarians to develop a training program for new undergraduates.

Recommendations

The present study is a preliminary survey which aims of understanding undergraduate students' information seeking behaviour. Therefore, the results should be interpreted with cautious since the size of the

respondents is small and most of them are females. Further research need to be conducted with a bigger sample size and representative respondents' gender for better understanding students' information seeking behaviour. Further research can be conducted to study students' information seeking behaviour among different types of academic programmes. Then, comparison of the students' behaviour can be performed. Finally, detailed analysis can be taken to identify the factors influencing students' behaviour in seeking information for a research project.

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