Research Article

Demonstrating the Electronic Resources Information Retrieval: Analysis on the Most Preferable Method

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Abstract

This paper reports the study's finding on the preferable method used by students while searching their electronic resources for assignment accomplishment. In accomplishing academic assignments, retrieving the right information from relevant and precise sources using the right methods is very critical. This is because there are various types of information retrieval methods that have been provided by the institution. By choosing the right information retrieval method, it will enable the student to reduce their searching time, to focus more and increase thinking creativity in information searching. For that reason, this study has been conducted to explore the preferable method used in searching electronic recourses among post graduate students in Malaysian Higher Learning Institutions. The methodology applied in this study is questionnaire survey. A set of 280 questionnaires have been distributed to seven (7) selected public institutions. The population selection is based on the amount of research works produced and the number of postgraduate enrollments. Out of 280 set of distributed questionnaires, a number of 200 questionnaires are valid for analysis. The results indicate that 162 respondents choose internet as a method in searching the electronic resources. The study concludes that the Internet is the most preferred method used in retrieving electronic resources. Therefore, subscribing the electronic resources from the Internet is the most important aspect. This is to ensure the student can reach an excellent value in their academic assignment accomplishment which has significantly correlates with their academic performance as well.

Keywords: Electronic resources, preferable method, internet, public institution

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Introduction

Every year, a great number of academic literatures are produced by academicians from various field of education in Malaysian Higher Learning Institutions. This literature serves as the most valuable intellectual asset for the institutions and at same time provides meaningful academic materials for retrieval by students in accomplishing their academic assignments. As mentioned by Park (2003), in academic public institutions the created literature is stored in electronic storage and becomes electronic resource. The usage of electronic resources becomes the main tool for student's especially postgraduate level introducing a quality and reliable academic output. The electronic resources offer students with different opportunities from their predecessors who have not relied on electronic resources in their assignment accomplishment. Brophy (1993) acknowledged that the information is obtained when it is wanted, so becomes 'just in time' rather than 'just in case", the user selects only the information needed to answer the specific question and, finally, the information is only stored should the user wish". This implies that electronic resource is a critical information source for its users.

In order to utilize the growing range of electronic resources, postgraduate students must acquire and practice the skills necessary to exploit them. As Dutton (1990) suggests, the skills required to maximize the potential of electronic resources are much greater than those required for searching printed sources. These skills include knowledge of the structure of the database and the instructions which must be input into the computer by the searcher, as well as an understanding of the ways in which the instructions are linked with one another.

However, the state of which skill and method are regularly used and preferred by postgraduate students is hardly known. As an initial effort to better understand the issues on the method of searching the electronic resources, a series of discussions have been conducted with the lecturers from selected public institutions. The outcome of the discussion reveals that, the issues on selecting the method of searching have also been a concern and addressed by the lecturers in other academic premises. By providing the postgraduate students with multiple platforms of searching, they still have their own preferable method of searching. This has led to the issues on precision and relevancy of the electronic resources gathered. By focusing on one type of searching method, they also will face the issues on resources validation. Most of their lecturers preferred to have multiple types of resources. But, in this case, there are a lot of postgraduate students that focus only on one specific methodology and their works become inappropriate.

As discussions continue, the lecturers also address that, a lot of methods in searching the electronic resources have been provided by public institutions. The methods include the medium or platform used in searching the electronic resources. These are the Internet, OPAC, and online database. This type of searching method was being developed to ensure the postgraduate student be reliable to use multiple methods in searching the electronic resources for their assignment. By having a lot of methods on retrieving the electronic resources, they can complete their assignment appropriately. The various methods of searching will lead them to produce good report in their assignment. But, in order to have a good report, the postgraduate student needs to have multiple skills in searching the electronic resources. Therefore, investigating and identifying the preferred method of searching electronic resources is require.

Based on this background issue, a study has been conducted to properly identify the preferable method to be used by the postgraduate student in searching the electronic resources in ensuring the

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accomplishment and quality of their academic assignment.

Academic Literature As Electronic Resources

In academic institutions, publication legacies such as theses, article papers, research reports, blueprints and other academic outcomes are created and published from time to time. The common storage system for these publication legacies are institutional repository systems or electronic resources made available for community sharing. In MARA University of Technology (UiTM) for example, there are Online databases, eBooks, Open Access Journals, Exam Papers (EQPS), UiTM Institutional Repositories, Search Digital Collection, Malaysia Thesis Online, Faculty Course Outline Resources (FCORP) and Islamic Finance Links (UiTM Library, 2013). In the National University of Malaysia (UKM), the Online Public Access, Electronic Journal and UKM Institutional Portal are examples of electronic systems available for research community reference including students (UKM, 2012). This practice has been widely practiced as the number of computerized files, called databases, grew from a mere handful in the early 1970's to the thousands available today.

In the universe, continuous and collective efforts have been in practice in making academic literature available for stakeholders through electronic means and retrieval. The ResearhGate and Academias are two well known examples of academic social networks publications and literature easily retrieved by information seekers for multiple academic and research purposes (Thelwall & Kousha, 2013). While Researchgate and Academia are two newest electronic resources systems providing easy access to information seekers, the older system such as OPAC, Koha, NewGenlib, Evergreen, SENAYAN, ABCD, and BiblioteQ are also means for storage of academic literature in academic institutions (Randhawa, 2013). This implies that, academic literatures, regardless of their

forms, are preserved as electronic resources for community access and retrieval. Thus, there are a lot of other electronic resources for information service that contain a wide variety of information types as well as several channels for information delivery.

Electronic Resources and Student Information Retrieval

Griffiths and Brophy (2002) have conducted a study on students' searching behavior in the JISC information environment. The study was aimed to develop understanding of users' searching behavior in the Information Environment by asking them to assess the quality of Distributed National Electronic Resource (DNER) services according to a range of defined criteria. The study was concerned with two questions:

1) How do students discover and locate information?
2) How do services (and aspects of services) rate in a student evaluation and what criteria are most important to them?

The results in particular raise very interesting and important issues:

1) Students prefer to locate information or resources via a search engine above all other options, and Google is the search engine of choice.

2) Whilst 70% of participants felt that they were successful only half of these thought that it was easy to locate information.

On top of that, Ren (2000) has conducted a user survey at the Newark campus of Rutgers University, New Jersey, involving 85 undergraduates participating in a library training program as part of their English composition course. The training was tailored to suit the students' needs, which required the writing of a literary criticism on a novel of a selected author. The students learned to search several, relevant online databases and were trained to construct search strategies and locate library research

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guides from the World Wide Web. Measures used to evaluate the success of the exercise included: self-efficacy in electronic information searching; attitudes towards acquiring electronic search skills; negative emotions; and search performance. It concludes that the students' self-efficacy in electronic information searching increased after the training and that increase was related to attitudes, emotional experiences and search performance.

Electronic Resources and Student Academic Performance

In the learning process, information seekers and students seek information from various sources. In supporting ubiquitous learning, universities provide access points into electronic resources everywhere such as in the library, laboratories, resource centers etc. The initiatives taken by universities' administration in providing such access is to ensure academic quality and best performance among students. According to Dahlstrom (2012), nearly all students reported that basic institutional services and resources are available online or on mobile device applications. These include services on the grade checking, course website and course learning management system. This shows that, each institutional has widely provided the online services method for students in searching the electronic resources.

For students with personal computer and personalized internet access facility, retrieving electronic resources can be established everywhere. The ubiquitous access into electronic resources will help this category of students accomplishing their academic assignment faster, reliable and of quality. Chen & Pen (2008), in their study, examined the basic relationship between the internet use of university students and their academic performance, interpersonal relationships, psychosocial adjustment and self evaluations. They prepared a questionnaire and collected 49,609 university juniors' comments about the

questions. The results show that non-heavy internet users have better relationship with administrative staff, academic grades and learning satisfaction than heavy users (Sahin, Balta & Ercan, 2010). This shows that the proper selection of tools has contributed to the student performance in terms of electronic resources usage.

The Method for Searching Electronic Resources among Students

The literature has revealed the various methods for effective searching of electronic resources by learners in general and universities students in particular. There are many methods available in searching the electronic resources. According to Bell (1997), electronic resources embrace information technology (IT), electronic publishing, digital, virtual or electronic libraries, bibliographic and full-text data (including journals) in electronic form, On-line Public access Catalogues (OPAC), World Wide Web pages, discussion lists, and electronic mail. Regardless of the method being used in retrieving the electronic resources, the main goal of retrieval is to locate the best information pertaining to academic tasks. The right information obtained using the right retrieval method will help students accomplish the given academic assignment effectively and efficiently.

The Preferred Method for Searching Electronic Resources

An initial verbal discussion has been established on the issue of retrieval method during the interview session with lecturers from the selected universities in the UiTM library on 1st November 2013. In the official/unofficial discussion, all participants acknowledged the issue and shared identical ideas in that the electronic resources retrieval method among students is not widely explored and reported. This insight triggers research endeavors. The literature survey made upon the initial unofficial discussion. Surveys undertaken at Oakland University (Schultz & Salamon, 1990) CD-

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ROMs discovered that 83% of students surveyed felt that using this source saved them time, and found it relatively easy to use. Allen (1989) looked at a number of studies undertaken to analyze patron response to using bibliographic databases on CD-ROM in academic libraries and found that users thought CD-ROMs could be used without prior knowledge or training. Patrons prefer CD-ROM to comparable printed reference tools and the majority of patrons found CD-ROM easy to use.

Nowadays, the internet network has eliminated the physical limits and the number of existing educational resources has increased so that it is possible to prepare assignments and projects in anyplace where the internet is accessible (Sahin, Balta & Ercan, 2010). Moreover, access to remote hosts via Web is often preferable because it provides additional benefits such as faster updating, optimum access, reduced burden in terms of storage, preservation and maintenance (Johnson, 2012). This shows that the internet or web access often becomes more preferable in this new era.

Therefore, a study was conducted in further investigating this issue. The following section reports the study and all necessary components pertaining to it. Immediately after this introductory section, the research question formulated for the study is discussed. The next section describes the research methodology and design that include population, survey method and data collection processes. The results, finding and limitations are also presented in the later sections.

Research Question

The research question that was designed to measure the issue of preferred method of searching electronic resources reads "What types of methods that being used by postgraduate's student in searching the electronic resources in Malaysia Higher Learning Institutions?" This question has been considered appropriate due to solving the issues on preferred method among postgraduates in Malaysia.

Research Design and Methodology

This study is a quantitative study and was designed to follow standard qualitative research. The research design is shown on the diagram below:

Fig 1: Structure of this Study

Figure 1 shows that the design of the study consists of 5 (five) phases. By reviewing the literature and conducting the interview, then identifying the problem is actually the research gap. In this study, the gap is centered on unknown preferred methods in searching electronic resources. The research progresses to identify the sampling and design of questionnaires. Having all the data get processed, the analysis and findings follow. At the end of this research process, the conclusion is made and recommendations are offered.

Population and Sampling

A number of 280 postgraduate students from seven universities involve in this research. The selection of universities is based on their capacity of postgraduate students and publication (MOE, 2010). Therefore, the sampling for this study was 40 postgraduate

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students from each university. The 280 respondents are selected based on random sampling i.e. the students retrieving electronic resources in the laboratory.

Data Collection

The questionnaire serves the data collection method for this study. The questionnaire approach is considered appropriate for data collection method due to considering the research questions, and the feasibility of collecting and analyzing the data. Marchionini (2009) describes that the quantitative studies generate data in the form of numbers, often depicted positively as reliable and rigorous, probably because of their association with 'science'.

Questionnaire Design

The questionnaire was designed to include both open and closed ended questions. The use of open and closed questions is to measure the intensity of views of respondents. In the closed section, the questions are multiple-choice items from which respondents were asked to choose. A few open questions were included in the questionnaire so as to get the views of the respondents in their own words. All questions from 1-25 are close-ended questions. Questions number 26 and 27 solicit comments and opinions from respondents and therefore were prepared in open ended style. Examples of closed ended and open ended questions have been shown in figure 2 as below.

Question 4 aimed to identify did respondents use electronic resources as tool in seeking information.

Q4:   Do you use electronic resources as tools in seeking information? (E.g.: Internet, Online databases etc.)

Question 5 aimed to identify which electronic resources did respondents used most.

Q5:   Which electronic resources do you use most?

• Closed Ended Questions

Question 26 aimed to identify the searching method that has not being included in this study.

Q26:   Are there any other method that being used in searching the electronic resources?

Question 27 aimed to have a comment from the reposndent in terms of study improvement.

Q27:   Comment.

• Open Ended Questions

Fig 2: The Examples of Open and Closed Ended Questionnaires

Data analysis

Data analysis process was being included in the quantitative data analysis computer program that is called Data Statistical Package for the Social Science software (SPSS). SPSS is one of the tools in generating the statistic of the research not only to the close ended question but also on the open ended question. There are two categories of statistics under the SPSS. There are descriptive statistics and inferential statistics.

In this study, the inferential statistics was being used to analyze the data because the questionnaire output was suitable to come out with the statistic information. In the process of creating the statistic of the data, the user's answer and the question were reviewed and analyzed. This is to ensure each of the data gathered are correct and response to the question.

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Result

In this chapter, there are descriptions on data analysis which are the results from questionnaires that have been collected from 200 respondents. This section presents the result yielded from the statistical analysis described in earlier section. The discussion of the result is as follows;

Demographic

Table 1: Demographic

DEMOGRAPHIC (Q1-Q3)		F	(%)
Gender	Female	120	60
	Male	80	40
	Total	**200**	**100**
Age	18-25	130	65
	26-35	54	27
	36-45	16	8
	45>	0	0
	Total	**200**	**100**
Semester	2	96	48
	4>	60	30
	3	22	11
	1	22	11
	Total	**200**	**100**

As tabulated in Table 1, 120(60%) of the respondents are female and 80(40%) of the respondents are male. About 130 (65%) of the respondent is in the range of age between 18-25 years old, 54(27%) is from the age 26-35 years old, 16 (8%) from the age of 36-45 years old, and none respondent from the one other range of age. The highest number of respondents are from semester two, 96 (48%) and 60 (30%) from semester 4 and above. Finally, the number of respondents from semester one and three is equal with the value of 22 (11%) respondents for each semester.

Types of Searching Method

Table 2: Types of Searching Method

TYPES OF SEARCHING METHOD (Q7)		F	(%)
Searching method that used most	Internet	162	81
	Online Database	27	13.5
	OPAC	11	5.5
	CD-ROMs	0	0
	Total	**200**	**100**

Table 2 shows the result on type of searching method. The number indicates that 100% of the respondents are using electronic resources as their tools in searching the

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information. The electronic resources such as the Internet, online database, OPAC and so forth. As a result, 162 (81%) respondents are choosing the Internet as the electronic resource that they prefer to use most while 27 (13.5%) from them prefer to use online databases. Only 11 (5.5%) of the respondents prefer to use OPAC as their most used search tool and none of the respondents is using CD-ROMs. Based on the findings, 185 (92.5%) respondents said that electronic resources are very useful to them. As students, in obtaining information and sharing the knowledge, certain respondents might use printed resources rather than electronic resources.

Discussion

There is one electronic resource that was chosen most by the respondents in completing their assignment. The majority of the respondents choose the Internet as the most used tool of electronic resources with 162 (81%). The findings showed that the postgraduate students most preferred to use the Internet as a tool in seeking information compared to others. This results is different compared to the research findings conducted by Hooper (1994) that showed the CD-ROMs and OPAC was the most preferred at that time.

Study Limitations

This study only focuses on the seven (7) selected public universities in Malaysia.
This study only focuses on postgraduate students.
This study only focuses on the method used in searching the electronic resources.

Conclusion

As a conclusion, this study has identified the factors with its important element that the researchers can use in identifying the most preferable method used by postgraduates' student in searching the electronic resources. This study contributes to giving a wide overview in terms of searching method types.

Thus, learning the respondents' approach at accessing the electronic resources shows that experience and exposure, search time spending, expectation, purpose, with the proper guidance from the staff, lecturers and friends influence the user's searching approach. This study involves more respondents' behavior, search strategies and their level of understanding. Finally, this study did establish students' behavior based on their response towards the preferable method used in retrieving the electronic resources.

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