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Measuring Dhaka University Students' Internet Use Behavior of the Department of Information Science and Library Management

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Abstract

This research has been conducted of the undergraduate students in the Department of Information Science and Library Management, University of Dhaka, Bangladesh. A survey questionnaire was developed and used to collect data on students' demographics, internet use behavior and purposes of internet use in the Department of Information Science and Library Management. The obtained input data were then evaluated using SPSS and the findings have been interpreted. The results showed that students prefer electronic media to printed media in seeking information and they use the Internet mostly to do homework and prepare for their lessons. The students find the quality of easy access of information more important than its other features and they use search engines most in seeking information. The most frequently used search engine is Google. This study discovers what kinds of differences in these behaviors and characteristics may exist between different class ranks.

Keywords

Internet, Students, Dhaka University, Bangladesh

Introduction

The Internet is an inseparable part of today's educational system. The academic increasingly depends on the Internet for educational purposes. A majority of academic and research institutions provide Internet service to students, teachers and researchers (Kaur, 2008). Students, especially, take advantage of the Internet in a multi-functional way and are using the information they access via the Internet in their homework ever more frequently. It is important to explore the information behaviors of the students who are being educated in the field of Information

Science and Library Management since the role they are going to play in establishing connections between information sources and users is crucial. For this reason, this study explores the characteristics of Information Science and Library Management students' use of the Internet, including the purposes for which students use the Internet, which search engines they prefer and their Internet skills.

Literature Review

There have been many studies undertaken in recent years concerning how and for what purpose individuals use the Internet. In a very recent study in Bangladesh by Mostafa (2011) showed that a high percentage of Internet use among students. More than 56 percent of the respondents use the Internet for educational purposes. Safdar *et al.* (2010) revealed that the students were new Internet users but used it regularly. Most had access to the Internet at home. They used this technology mostly for communication and educational purposes. In another study Nazim and Saraf (2006) showed that all respondents are using Internet because of quality information they got through the Internet. Majority of respondents use Internet for research work because the university library has provided access to a large number of databases and online journals. Hong *et al.* (2003) indicated that students had positive attitudes toward using the Internet as a learning tool, adequate basic knowledge of the Internet. Fidzani (1998) and Clougherty (1998) said that when we look at the studies on the information-seeking behaviors of undergraduate students, we see that these studies are generally related to their information-seeking behavior in conjunction with the use of the university library. Some other studies examine the effect of different disciplines on students' information-seeking behavior. Kerins, Madden and Fulton (2004) tested the information-seeking behaviors of law and engineering students in Ireland with an experimental study and compared the results with the information-seeking behavior characteristics defined by Leckie, Pettigrew and Sylvain (1996).

While these studies discuss broad areas of students' information-seeking behaviors, it can be observed that other studies focused on the Internet and World Wide Web. Van Scoyoc and Cason (2006), who studied students' library use habits, showed that undergraduate students use the Internet and online education modules but do not use university libraries' Web pages and sources. Armstrong *et al.* (2001) indicated that students' information-seeking processes centered around locating electronic resources, that the Internet is used more than other information channels and that very few differences can be seen among student groups in the use of electronic

sources of information. In a study conducted with undergraduate and graduate students, Aiken *et al.* (2003) tried to identify students' purposes in using the Internet. Davis and Cohen (2001); Davis (2002) and Robinson (2003) investigated the effect of the Internet and Web on students' term projects, it has been understood that students are referring to electronic sources more but that they need training on documentation processes and format. Oppenheim and Smith (2001), of Loughborough University, conducted a similar study on information science students. They analyzed the types and years of materials these students used in the bibliographical references in their assignments and dissertations. The results of a questionnaire conducted by Majid and Tan (2002) in order to identify information source preferences of computer engineering students indicate that the students primarily use books with the Internet as the third important source of information. In such studies, it has been stated by Adame *et al.* (2005) and Healy *et al.* (2005) that the students are eager to use the Internet for health topics, gender and experience affect Internet use characteristics and computer-aided education is effective in student success. Another study, Roman (2003) examining the effect of gender on Internet use by library science students concluded that there is no significant difference between male and female subjects' rate of Internet use, but their Internet skills do affect whether or not they find the Internet useful. In addition to studies related to students' general Internet use characteristics, there are studies about their Web usage characteristics. Hsieh-Yee's (2001) review is one of these and is important in terms of introducing related literature since it is comprised of studies conducted between the years 1995–2000. In addition to this review, there are other studies in the literature - such as Fidel *et al.* (1999) - examining students' information-seeking behavior on the Web: Markland's (2005) study of search engine preferences and Hess (1999), Kyung-Sun (2001) and Nahl's (1998), study of the effect of students' experiences and cognitive structures on browsing.

Methodology

This research has been conducted for the purposes of identifying the information-seeking behaviors and especially the Internet-use characteristics of the undergraduate students of the Information Science and Library Management Department, Dhaka University, Bangladesh and to discover what kinds of differences in these behaviors and characteristics may exist between different class ranks. In this study, a questionnaire was given to forty five students from each grade level, 180 students total. The questions were designed to solicit information about the purposes for which they seek information, how they meet their informational needs, their frequency of use and the purposes for which they use the Internet, where they can access the Internet, the qualities they look for in the information they find, which search engine they use

most frequently and finally, their knowledge and skills in relation to the Internet. The obtained input data were then evaluated using SPSS and the findings have been interpreted.

Results

Need for Information

Table 1 shows the need for information for the purpose of homework rated 15 (33.33%) for the first year, 17 (37.78%) for the second years, 12 (26.67%) for those in the fourth year and at the top of the list with 19 (42.22%) for third year students. Information seeking for the purpose of homework is followed in second place by information seeking to trace “the latest developments in an interest area.” 12 (26.67%) of the students who indicated as their first choice seeking information to trace the latest developments on the area of interest are in their first year, 10 (22.22%) are second year students, 7 (15.56%) are third year students and 11 (24.44%) are in their last year. Among the fourth year students, the most important information-seeking purpose is doing research for their courses 14 (31.11%). This comes in second place 10 (22.22%) among the third year, 9 (20%) of the first year students and in the last place 5 (11.11%) for the second year students. Hobby, entertainment, and interest-related research is in third place with 7 (15.56%) for first year and fourth year students is the least important whereas for the second 13 (28.89%), third 8 (17.78%).

Table 1: What purposes do you mostly have while seeking for information?

Year	To do research (%)	To do homework (%)	To learn about the latest development (%)	Personal interest/hobby (%)	Other (%)
First year	9 (20)	15 (33.33)	12 (26.67)	7 (15.56)	2 (4.44)
Second year	5 (11.11)	17 (37.78)	10 (22.22)	13 (28.89)	0 (0)
Third year	10 (22.22)	19 (42.22)	7 (15.56)	8 (17.78)	1 (2.22)
Fourth year	14 (31.11)	12 (26.67)	11 (24.44)	7 (15.56)	1 (2.22)
Total (n=180)	38	63	40	35	4

Ways Used in Meeting the Need for Information

The following table 2 shows the response to this question, the top choice of all classes was the Internet. 15 (33.33%) of the first year students, 22 (48.89%) of the second year students, 29 (64.44%) of the third year students and 24 (53.33%) of the fourth year students said they use the Internet to meet their need for information. The Internet is followed in second place by the university library. 5 (11.11%) of the first year students, 3 (6.67%) of the third year students, 9 (20%) of the last year students, and 12 (26.67%) of the second year students selected the university library as the first place they refer to in order to meet their need for information. In comparison, the number of students who meet their need for information by consulting their own libraries is very closed to the university library but their teachers, the libraries of other institutions and their friends is very low compared to these choices.

Table 2: How do you meet your need of information?

Year	From my own book (%)	From the university library (%)	From the libraries of other institutions (%)	From the internet (%)	From my teachers (%)	From my friends (%)
First year	11 (24.44)	5 (11.11)	2 (4.44)	15 (33.33)	7 (15.56)	5 (11.11)
Second year	5 (11.11)	12 (26.67)	0 (0)	22 (48.89)	3 (6.67)	3 (6.67)
Third year	3 (6.67)	3 (6.67)	4 (8.89)	29 (64.44)	4 (8.89)	2 (4.44)
Fourth year	7 (15.56)	9 (20)	1 (2.22)	24 (53.33)	2 (4.44)	2 (4.44)
Total (n=180)	26	29	7	90	16	12

Information Media Preferences

Table 3 indicates the majority of the students prefer electronic media to printed media. Among the first year students, the rate of those who prefer electronic media is 16 (35.56%), in the second year 34 (75.56%), in the third year 36 (80%) and in the fourth year 38 (84.44%). Printed media preference is higher among first year students than for the other class levels.

Table 3: Which media of information do you prefer?

Year	Printed (%)	Electronic (Internet) (%)
First year	29 (64.44)	16 (35.56)
Second year	11 (24.44)	34 (75.56)
Third year	9 (20)	36 (80)
Fourth year	7 (15.56)	38 (84.44)
Total (<i>n</i> =180)	56	124

Frequency of Internet Use

In table 4 illustrates that most of the students use the Internet every day. While the students in the second year are at the top of the every-day list with 31 (68.89%), they are followed by the fourth and third year students both with 28 (62.22%) and the first year students with 21 (46.67%). In the several times- a-week category, the first year students are at the top of the list with 16 (35.56%); then come the third year students with 13 (28.89%), the fourth and second year students both with 10 (22.22%). While there are no students who never use the Internet, the rate of the students who use the Internet several times or less a month is also very low.

Table 4: How often do you use the Internet?

Year	Every day (%)	Several times a week (%)	Several times a month (%)	Once in a month (%)
First year	21 (46.67)	16 (35.56)	5 (11.11)	3 (6.67)
Second year	31 (68.89)	10 (22.22)	3 (6.67)	1 (2.22)
Third year	28 (62.22)	13 (28.89)	2 (4.44)	2 (4.44)
Fourth year	28 (62.22)	10 (22.22)	4 (8.89)	3 (6.67)
Total (<i>n</i> =180)	108	49	14	9

Access to the Internet

According to the results, table 5 shows that the majority access the Internet from their department's computers. The rate of the first year students who access the Internet from their department is 23 (51.11%), for second year students 27 (60%), for third year students 20 (44.44%) and for fourth year students 19 (42.22%). This means of access is followed by those who access the Internet from their home. Of those who access the Internet from their home, 17 (37.78%) are fourth year students (at the top of the list), 8 (17.78%) are first year students, 7 (15.56%) are second year students and 17 (37.78%) are third year students. The rate of access

from cyber cafes is 13 (28.89%) of both first and third year students, 9 (20%) from second year students and 5 (11.11%) from final year students. The rate of access from the library is low. That the library does not have enough facilities to provide Internet access to the students is a contributing factor for the library's being at the bottom of the list.

Table 5: Where do you get access to the Internet?

Year	From the library (%)	From the department (%)	From the home (%)	From the cyber café (%)
First year	1 (2.22)	23 (51.11)	8 (17.78)	13 (28.89)
Second year	2 (4.44)	27 (60)	7 (15.56)	9 (20)
Third year	2 (4.44)	20 (44.44)	10 (22.22)	13 (28.89)
Fourth year	4 (8.89)	19 (42.22)	17 (37.78)	5 (11.11)
Total (<i>n</i> =180)	9	89	42	40

Purposes for Using the Internet

Table 6 indicates that a vast majority of the students use the Internet for their courses and homework assignments. 28 (62.22%) of the fourth year students, 24 (53.33%) of the third year students, 21 (46.67%) of the second year and 16 (35.56%) of the first year students have marked using the Internet for the assignments and courses option as their first preference. This preference is followed by the options of using the Internet for e-mail and for personal interest. While the second year students are in the first place in using the Internet for e-mail with a rate of 12 (26.67%), the rate of the first year is 9 (20%), third year is 7 (15.56%) and fourth year is 3 (6.67%). Using the Internet for personal interest is the third important purpose for the students. The group who found personal interest to be their most important purpose in using the Internet were the first year is 10 (22.22%), second and third year students with both a rate of 5 (11.11%). Those who found this choice the least important were the fourth year students. Since it is possible to access library resources via library Web sites, the answer of "to access the library Web site" is included among the answers to the question "For what purpose do you use the Internet?" The results, however, indicate that "accessing library Web sites via Internet" option is still among the ones least picked. Considering the first three choices, we can see that a poor number of the first and second year students often use the Internet to access the library while the third and

fourth year students marked this choice more frequently. In the fourth place among the purposes of using the Internet come the music, games and entertainment option. Chat comes in the last place.

Table 6: For what purposes do you use the Internet?

Year	Course/ homework research (%)	To get access to the libraries websites (%)	Personal interest	Hobby/ music/ games/ entertainment (%)	E-mail (%)	Chat (%)
First year	16 (35.56)	1 (2.22)	10 (22.22)	5 (11.11)	9 (20)	4 (8.89)
Second year	21 (46.67)	1 (2.22)	5 (11.11)	4 (8.89)	12 (26.67)	2 (4.44)
Third year	24 (53.33)	2 (4.44)	5 (11.11)	5 (11.11)	7 (15.56)	2 (4.44)
Fourth year	28 (62.22)	3 (6.67)	5 (11.11)	4 (8.89)	2 (4.44)	3 (6.67)
Total (<i>n</i> =180)	89	7	25	18	30	11

Qualities Sought in Information Reached via the Internet

When looking for information on the Internet, table 7 shows that the students consider most how easy it is to access with 12 (26.67%) of the first year students, 19 (42.22%) of the second year students, 23 (51.11%) of the third year students and 16 (35.56%) of the fourth year students choosing the easy access as the first option. While all students find easy access to be the most important quality of the information, their second option varies. While 8 (17.78%) of the third year students think the second most important quality of information is that it should be complete and well directed, 4 (8.89%) of the first year students find its being accurate and certain as the second important one, 8 (17.78%) of the first year students think that information should be new and up-to-date, whereas 11 (24.44%) of the first year students think that the most important quality should be its relevance to the topic. Audiovisual effects are the least considered feature for all the classes.

Table 7: What quality do you look for in the information you reached via the Internet?

Year	Easy access (%)	Relevancy (%)	Being up-to-date (%)	Being complete and well-directed (%)	Accuracy and certainly (%)	Audio-visual features (%)
First year	12 (26.67)	11 (24.44)	8 (17.78)	6 (13.33)	4 (8.89)	4 (8.89)
Second year	19 (42.22)	5 (11.11)	5 (11.11)	7 (15.56)	5 (11.11)	4 (8.89)
Third year	23 (51.11)	4 (8.89)	4 (8.89)	8 (17.78)	3 (6.67)	3 (6.67)
Fourth year	16 (35.56)	7 (15.56)	7 (15.56)	7 (15.56)	5 (11.11)	3 (6.67)
Total (n=180)	70	27	24	28	17	14

How Do You Reach Information on the Internet?

Table 8 illustrates that “Search engines” is picked as the answer to this question by the vast majority of the students. 25 (55.56%) of the first year students, 37 (82.22%) of the second year, 38 (84.44%) of the third year and 36 (80%) of the fourth year students prefer use of a search engine to reach the information. While the rate of the students who use the Web sites they already know is very low, it is sad and thought-provoking that 10 students from the first year, only 3 students from the second year, 2 students from the third year and 5 students from the final year use the library's Web site to access the information.

Table 8: How do you reached the information in the Internet?

Year	From the websites I know (%)	From the search engines (%)	From the library website (%)
First year	10 (22.22)	25 (55.56)	10 (22.22)
Second year	5 (11.11)	37 (82.22)	3 (6.67)
Third year	5 (11.11)	38 (84.44)	2 (4.44)
Fourth year	4 (8.89)	36 (80)	5 (11.11)
Total (n=180)	24	136	20

Search Engine Preferences

Table 9 indicates that almost all the students marked the Google search engine as their first preference, 43 (95.56%) of the first year, 41 (91.11%) of the second year, 40 (88.89%) of the third and 33 (73.33%) of the fourth year students. Google is followed by Yahoo!. MSN and Altavista are preferred in third place but with a very low rate.

Table 9: Which of the following search engines do you prefer?

Year	Google (%)	Yahoo! (%)	MSN (%)	Altavista (%)
First year	43 (95.56)	2 (4.44)	0 (0)	0 (0)
Second year	41 (91.11)	4 (8.89)	0 (0)	0 (0)
Third year	40 (88.89)	3 (6.67)	2 (4.44)	1 (2.22)
Fourth year	33 (73.33)	7 (15.56)	3 (6.67)	1 (2.22)
Total (n=180)	157	16	5	2

How Much Do Search Engines Meet Information Needs?

The following table 10 shows that 9 (20%) of the first year, 10 (22.22%) both of the second and final year, 6 (13.33%) of the third year students said that search engines meet their information needs. 32 (71.11%) of the first year, 35 (77.78%) of the second year students, 39 (86.67%) of the third year students and 33 (73.33%) of the fourth year students said that search engines meet their information needs partially. Only 4 students from first year and 2 students from final year said that search engines do not meet his/her information needs.

Table 10: Do the search engines you use meet your needs of information?

Year	Completely (%)	Partially (%)	They do not (%)
First year	8 (17.78)	32 (71.11)	4 (8.89)
Second year	10 (22.22)	35 (77.78)	0 (0)
Third year	6 (13.33)	39 (86.67)	0(0)
Fourth year	10 (22.22)	33 (73.33)	2(4.44)
Total (n=180)	35	139	6

Internet Skills

Table 11 indicates that almost all learned these skills on their own. 22 (48.89%) of the first year, 30 (66.67%) of the second year, 28 (62.22%) of the third year and 36 (80%) of the fourth year students learned how to use the Internet on their own. 9 (20%) of first year, 6 (13.33%) of both second and fourth year and 8 (17.78%) of third year students learned how to use the Internet by

the help of courses. Help from friends comes in third place, and help from family comes in last place. The number of students who learned to use the Internet with the help of librarians is 3, which is the lowest.

Table 11: How did you learn how to use the Internet?

Year	With the help of my family (%)	With the help of the courses (%)	On my own (%)	With the help of my friends (%)	With the help of the librarians (%)
First year	3 (6.67)	9 (20)	22 (48.89)	8 (17.78)	3 (6.67)
Second year	5 (11.11)	6 (13.33)	30 (66.67)	4 (8.89)	0 (0)
Third year	5 (11.11)	8 (17.78)	28 (62.22)	4 (8.89)	0 (0)
Fourth year	1 (2.22)	6 (13.33)	36 (80)	2 (4.44)	0 (0)
Total (n=180)	14	29	116	18	3

Competency of Students in Using the Internet

We can see from table 12 that the first and second year students see themselves competent respectively 6 (13.33%) and 7 (15.56%). The majority of the students see themselves as partially competent in using the Internet. 28 (62.22%) of the first year students, 32 (71.11%) of the second year students, 29 (64.44%) of the third year students and 23 (51.11%) of the fourth year students accept that they do not have all the necessary skills and knowledge and consider themselves partially competent. The groups who believe they are least competent in using the Internet is the first and second year students. 11 (24.44%) of the first year students, 6 (13.33%) of the second year students, 5 (11.11%) of the third year students and 3 (6.67%) of the fourth year students find themselves incompetent in terms of skills and knowledge.

Table 12: How competent do you think you are in seeking information in the Internet in terms of skills and knowledge?

Year	Competent (%)	Partially competent (%)	Incompetent (%)
First year	6 (13.33)	28 (62.22)	11 (24.44)
Second year	7 (15.56)	32 (71.11)	6 (13.33)
Third year	10 (22.22)	30 (66.67)	5 (11.11)

Fourth year	19 (42.22)	23 (51.11)	3 (6.67)
Total (n=180)	42	113	25

Discussion

The data obtained from this research indicate that students use the Internet to complete homework assignments. That this need increases after the second year and peaks in the last year may be connected to the increase in practical homework assignments during the last two years. The data obtained also indicate that students prefer electronic media to printed media and that they get information mostly from the Internet. The rates of electronic media preference are close to each other among the second, third and fourth year students whereas this rate is lower for first year students. Although “preferring the Internet as a means of information” option is at the top of the list of options for all third years, when compared to each other it can be seen that the first year students choose this option less than the upper grades. This difference may be explained as the effect of the “Introduction to Computer” course taken in the first term and “Internet and Accessing the Information” taken in the second term. Similar results are observed in the answers given to the question of Internet use frequency. The majority of the students use the Internet daily. This is followed by the students who use the Internet several times a week. Comparing by the year level of the students, we can see that the frequency of Internet use increases remarkably among the second year students and that the most significant difference in frequency of use is between the first and the second year students. These data strongly indicate that the information-media preference, finding the Internet important in meeting their information needs and the frequency of Internet use increase significantly for students when their second year starts due to the courses they take and the facilities of the department.

The majority of the students gain access to the Internet from their department's connections. It is clear that this is because their department has computer labs connected to the Internet and designed for the use of students. Likewise, we can explain the low number of students gaining access to the Internet from the library due to the library's limited facilities.

When we look at the students' purposes in using the Internet, we see that it is used mostly for homework assignments. Reviewing the data obtained, we see that using the Internet for homework assignments increases among the second and third year students. Using the Internet for personal interest is seen mostly among first year students. Although much research in the literature related to the use of the Internet indicates that the Internet is mostly used to check e-

mail, contrary to our expectations, the results of our research show that the students do not regularly use the Internet to check e-mails or chat. Similarly, using the Internet for music-games-entertainment is in the fourth place among the alternatives. Our results can perhaps be related to the students in our study getting Internet access from their department's computers. Considering the high usage and overcrowding of the computer labs in the department, we can understand these results better.

As is widely known, the Internet is not only an important tool for e-mail, chat and entertainment purposes but also for research and accessing library Web sites. It is possible for students to have access to bibliographic and full-text databases relevant to their discipline through their university library Web site. Consequently, it is surprising that using the library's Web site constitutes a poor percentage among the purposes for using the Internet. It is discouraging that using the Internet with the intention of reaching the library Web sites is this low, especially when students primarily need information for their homework assignments and the Internet is used mostly to conduct research for courses and homework assignments. These results accord with the answers given to the question "how do you reach information?" It is worth the attention that almost all the students prefer search engines for reaching information and that there are only 7 students from all year who accesses information using the library Web site. This is especially worth investigating since these students, who are getting library science education, are reluctant to use the university library which has a rich electronic collection and a good Web site. It is possible to explain these results to some extent with the results obtained from the answers given to the question related to "qualities looked for in information." That all four classes prefer easy access as their first choice shows that students evaluate information in terms of this quality rather than in terms of accuracy, reliability, relevancy, appropriateness, completeness and actuality. This situation is thought-provoking as it shows the habits of "students as future information managers."

Although search engines are the preferred first choice and used most frequently in reaching information, the number of students who say that search engines completely meet their information needs is very low. The majority of the students say that they meet their information needs partially. Almost all the students prefer Google as their first choice among the search engines. Google is followed by Yahoo!, MSN and Altavista.

As for the questions related to how students learned to use the Internet and if they find themselves competent or not, it is seen that most of the students learned how to use the Internet on their own, followed by those who have learned the Internet with the help of the courses. The

first and the third year students constitute the majority of those who say that they have learned how to use the Internet with the help of the lessons. The rate of students who have learned the Internet from their families is very low and there are only 3 students from first year who learned the Internet with the help of a librarian. This condition shows that the activities of the library on this subject are not at the desired level. In fact, most of the students see themselves as only partially competent in using the Internet. That most of the students who think they are the least competent in using the Internet are first year students and that the fourth year students are prevalent among those who consider themselves competent in using the Internet indicate that training, indirectly at least, affects the use the Internet.

Conclusion

According to the results of this study, the students prefer electronic media to printed media in seeking information and they use the Internet mostly to do homework and prepare for their lessons. The students find the quality of easy access of information more important than its other features and they use search engines most in seeking information. The most frequently used search engine is Google. While most of the students say that they have learned to use the Internet on their own, the majority regard themselves as only partially competent in using the Internet. There are differences between the first year and the other years in terms of the need for information and the ways to reach it, electronic media preference and the purpose and the frequency of using the Internet. Besides this, there are no important differences in terms of the answers given to the questions related to how they reach the information through the Internet, the search engines they prefer and to what extent search engines meet their information needs.

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