ISSN 2348-1196 (print)
International Journal of Computer Science and Information Technology Research ISSN 2348-120X (online)
Vol. 2, Issue 4, pp: (318-325), Month: October - December 2014, Available at: www.researchpublish.com

Google in Perspective: Understanding and Enhancing Student Search Skills in Pakistan

Zikria Mian

(Assistant Professor) Department of management and business Sciences,
National University of Sciences and Technology (NUST) University Islamabad Campus, Pakistan

Abstract: **Internet has come up with the most revolutionary aspects in all formats of life. The same is true about students and academics as well. Google currently is the biggest search engine in the world with a great amount of data daily entering into its database. Many students prefer Google for searching different kinds of information. This current study takes into account students' familiarity with the computer activities and their response to the Google search engine. The key methodology for this study was primary research. Distribution of the Questionnaires was the key mode of the Primary Research. The questionnaires were distributed among the students of IQRA University Islamabad Pakistan, FAST University Islamabad Pakistan, BAHRIA University Islamabad and Fauji Foundation University Islamabad Pakistan. The responses of the students were primarily analyzed with the help of the frequency analysis. The results included students' favorable and unfavorable responses. The finding of the survey shows that students have moderate skills of using and manipulating the computer activities, browsing the websites. The findings also indicate that students do not have any skill of developing or designing any kind of webpage. The results indicate that students mostly prefer Google search engine for their Internet information search. They search through simple techniques over the Google search engine. Furthermore, students do not use the Google Advanced search option while searching through Google search engine.**

Keywords: **Search Engines, Boolean Operators, search techniques, Internet.**

1. INTRODUCTION

Google is the biggest online Information oriented and online advertisement company in the world. The Google specifically operates as a search engine source. It has the highest amount of websites' data from all over the world (Data monitor, 2009). Google came into being in 1998. Two students from the Stanford University were the inventors of the Google. Their strategy for starting business as Google was to focus on creating web searches and earning through advertisements (Vise & Malseed, 2005). The word Google itself means a huge number. It comprises of the numeral 1 followed by hundred zeros (Schneider, Blachman & Frederickson, 2003). Google is a key source for the students who cannot find the learning materials easily from their libraries. As a result, they reach for convenience and Google is turns out to be the best option for the students (Foster, 2007).

But this convenience has its drawbacks as well. As while searching information through Google, one can gain unwarranted and unofficial information. But yet still despite knowing that students still prefer Google as their key source of information extraction (Becker, 2003).

On the basis of increasing usage behavior of the students to use Google, this research studies the student's search behavior on the Google search engine. It focuses on the search techniques which they specifically use and the other alternatives which are available and which they prefer (Becker, 2003).

2. PROBLEM IDENTIFICATION

While studying in the universities, it is very common for the students to search information about a particular topic. They do it as part of their assignment, as a project, research papers, and even for some extra information etc. However, behind

all of these activities, which a student performs to search information, there are different sources from where they access information. A study identifying these sources of information can create valuable results for students.

In the current era, there are a lot of options for the students to search the information. Libraries, media sources both print and electronic ones were traditionally the common sources of information. Ever since the students have gained access to the Internet and websites, they have retrieved all formats of information under one platform. However, for despite this convenience, the information search over the Internet is not much simple. It requires a certain degree of skills to gain the accurate information.

Internet search engines specifically do this job of information search online. Among such search engines, many believe that Google is the most dominant and reliable. Since even search engines, have their own drawbacks in retrieving an accurate and desired information. Therefore, a key area is to specifically identify students' search procedures to search information over Google.

Moreover, even on the Google search engine it is very common that a person is searching particular information but not getting it. Despite the fact the information is available, but the Google search engine does not generate the required results because of wrong input in the Google search bar. As a result, another key problem identification area can involve recommending such procedures, which enhance students' search skills over Google.

As a result, combining all above, there is a need to evaluate the students' basic skills of using information search over Internet. Plus, there is also a need to identify students' search operations' procedures over the Google search engine. Furthermore, on the basis of identification of search mechanisms, there is a need to enhance students' search mechanisms over Google search engine.

Problem statement:

As the students are frequently using online search engines like Google, there is a need to evaluate students' search operations' procedures and techniques on Google search engine and to enhance them as well.

Research Question:

What are the different methods and techniques, use by the students for the online search engine "Google" and how these techniques should be enhance?

3. OBJECTIVES OF THE STUDY

The objectives of the study regarding identifying students' search skills over Google search engine and their enhancement are as under

- To identify the students' basic skills in terms of their familiarity regarding online commodities like emails, word processing etc.
- To verify the core purpose of the students' primary usage of the Internet.
- To evaluate students' basic search procedure to find information over the Google search engine.
- To record students' response regarding there believe that a particular technique they use is more effective or not over the Google search engine.
- To propose more effective techniques in order to enhance students' search operations over the Google search engine.

4. RATIONALE OF THE STUDY

Internet came up with revolutionary change in the society. It made a big impact on all segments of the society. It opened the possibility of retrieving and sharing the maximum amount of information. It also made a big impact on the academic institutions as well.

Students in particular retrieve, sear and share greater extent of information over the Internet. Students find information search through Internet as one of the easiest way rather than exploring papers and books in the libraries. Moreover, the presence of Google search engine over the Internet has also specifically eased the way for students to search information online.

The study evaluates four key segments from the students' perspective within the context of Internet information search. Firstly, this study helps to evaluate students' familiarity with the Internet contents and commodities. For this purpose this study help to evaluate students' knowledge regard websites, emails, and other online stuffs.

Secondly, this study helps to identify the primary usage of the Internet by the students. Thirdly, this study helps to identify students' basic techniques to search information over the Google search engine. Finally this study is going to enhance the students' search techniques over the Google search engines. This research is primarily based upon the best practices specifically recommended by previously published researches.

5. SCOPE OF THE STUDY

This study focuses on evaluation of the students' search information techniques and proposing different ways to enhance them. The identification is categorized into four key segments, which are familiarity, primary usage, Google search techniques and finding different ways to enhance Google search. This study focuses on the students. More precisely this study focuses on the students of three major universities of Islamabad, which are IQRA University, Fauji, BAHRIA, FAST Islamabad University.

6. REVIEW OF THE LITERATURE

The web usage among the academic institutions like schools, colleges and universities became common in the mid 1990s. One study found that during 2002, ninety nine percent public schools in United States were having Internet access (Kleiner, Lewis & Greene, 2003).

One survey found that during the year 2000, which about fifty seven percent of the high school students had Internet access. Twenty one percent specifically relied on the Internet for doing their academic works. These academic works specifically included assignments and online access of the courses (Frechette, 2005).

Most of the researches related to online contents primarily focused on the interfaces of the websites. Moreover, they focused on the consumers' response to the online contents like fonts, colors, pictures and multimedia etc. Plus they also focused on the web page navigation as well (Nielsen, 1993).

The amount of search links over the Google websites have increased rapidly over the past several years. For example in the year 2001, Google only generated about twelve thousand three hundred average website links. In the year 2008, it generated nearly seventy eight million average website links for a single query. An average user in United Kingdom made about one hundred and twenty four searches per month over Google (Walmsley, 2008).

Google was the brand of the year in 2003. In that year Google's performance as a brand was much better than the big brands like Coca-Cola and Apple. Seven out of ten people globally preferred Google for searching some information over the Internet (Google Voted, 2004).

In the year 2009, according to the statistics of the Inter-brand, Google was on the seventh spot in terms of brand value. Google had a global worth of 25 billion US dollars. Google was ahead of Toyota, Intel and Disney Brands (100 Best Brands, 2009).

According to one study in United Kingdom, forty-five percent of the students at the universities preferred Google as their top priority to search information. Only ten percent specifically focused on the library catalogues for searching information. Students were of the opinion that information search on Google is primarily attributed by convenience, time-saving and more successful (Griffiths & Brophy, 2005).

Most of the individuals in their normal were focusing on finding new ways to extract information. As a result, they were ignoring the traditional information search behavior. But that research was before the arrival of the search engines. However, the same technique was now valid for the online search engines as well (Jansen, Spink & Saracevic, 2000).

Marachionini (1992) argued that when it came to analyze and think logically, humans had preferred to choose the most convenient path. Griffiths & Brophy (2005) found that seventy percent students were able to find correct information on the website through Google.

When it came to the online search engines the users had mostly preferred efficiency, effectiveness and utility. The users ignored the interaction component as an important one within the context of information search through search engines (Johnson, Griffiths & Hartley, 2003).

Ellis, Ford & Furner (1998) found that users tended to prefer quick results. They just wrote the queries over the search engines without entering Boolean words like "AND" and "OR". The users expected the search engines to automatically create such Booleans for them.

Griffiths & Brophy (2005) found that students at the university specifically preferred Google because of its straightforwardness. Its spelling correction feature was also alluring for the students as well. Similarly the brightness of the page and simplicity of the usage were the other reasons for adapting Google.

Online users mostly students were specifically attracted to Google and Wikipedia because of its simple and clean web design. Both of these search engines served the students best to fulfill their research requirements. Google also had an option for the students to research through quotation marks, through minus sign and through the site operator (Watkins, 2008).

The quotation marks helped the students to specifically find exact words or phrases. The minus sign helped the students to actually reduce particular content from the search generations. Finally the site operators like edu; gov etc. helped the students to gain access from the reliable sources (Watkins, 2008).

However, Google might also be a problem for many academic institutions as well. There were reports of online websites, which just totally assist the students to make their projects and assignments. Google however, banned such websites. But yet still, the numbers of users among those websites were increasing. Such websites were able to make any project or assignment ranging from seventy to five thousand US dollars (Alexandra, 2007).

Jaspen (2004) stated with the help of Google could help to gather basic background information. But Google's lacking feature was to find the high quality and reliable scholarly researched papers. That was the seriously lacking feature in the Google search and it also could be unreliable from the academic perspective (Jepsen et al. 2004).

In order to give more verified and reliable source of information to the users, Google also introduced Google Scholar. It helped the users to get access to different journals, databases, and other financial reports as well. However, the experts were of the opinion that despite its ultimate value, it still lacked basic search features (Badke, 2009).

Google introduced Google Scholar in 2004. It primarily comprised of the scholarly literature (Poe, 2007). One of the serious lacking of Google scholar was that it did not arrange the article in ascending or descending order. In other words it did not search on the basis of time and date. Therefore, precision was absent there in the Google Scholar search. However, it still provided highly reliable data (Badke, 2009).

In Google scholar a user cannot get a full access. In most of the articles it always asked about the login or click purchase for complete access. Furthermore, it did not carry all the articles. It still had its limitation. Experts proposed it as a tool to be used as one of the source only (Badke, 2009).

7. METHODOLOGY

The sample size for this study was two hundred and fifty respondents. The key respondents for this study were the students from IQRA, Fast, Bahria, NUST and Fauji Foundation universities of Islamabad and Rawalpindi Pakistan. The sampling technique used for this research was Convenient sampling. However, the key pre-requisite for this study was still be that the student be at least a frequent user of the Google search engine at least a week.

The data extraction instruments for this study were primary and secondary data sources. Secondary sources of data contained already published research papers. Furthermore, offline book materials as well as the magazine articles and periodicals were also primarily studied for this study as well. The key variables in the secondary research were comprised of students' preference of search engine, the source where they knew about it and their searching techniques online.

The primary data was comprised of questionnaires. These questionnaires were specifically distributed among the university students. This questionnaire was adopted and adapted from a reliable and published research paper (Becker, 2003). The questionnaire was comprised of two key portions. The first part of the questionnaires was measure the demographic measures. Nominal scale was the key measuring scale for this part of the questionnaires. It measured three variables. These variables included gender, age and department of the students.

ISSN 2348-1196 (print)
International Journal of Computer Science and Information Technology Research ISSN 2348-120X (online)
Vol. 2, Issue 4, pp: (318-325), Month: October - December 2014, Available at: www.researchpublish.com

The second portion of the questionnaires was specifically measured on the 5 point likert scale. After collection of the primary and secondary data sources, the primary data was specifically added to the statistical tool for management science (SPSS). In the SPSS software, the analyses of the primary data were specifically analyzed with the help of the frequency analysis. On the basis of the frequency analysis, the favorable responses of the students regarding Google were be primarily concluded. The recommendations were base upon the conclusion and also on the literature review, where the experts have suggested different tips for operating through Google.

8. RESULTS AND DISCUSSION

Table 1.1:

Frequency Distribution of the Responses with respect to Gender (n=250).

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	152	60.8	60.8	60.8
Female	98	39.2	39.2	100.0
Total	250	100.0	100.0	

The total numbers of respondents for this study are 250. Male represents about 61% of the total sample. Females represent 39% of total sample size.

Table 1.2:

Frequency Distribution of the Responses with respect to Age (n=250).

	Frequency	Percent	Valid Percent	Cumulative Percent
18-20	101	40.4	40.4	40.4
21-22	118	47.2	47.2	87.6
23-24	17	6.8	6.8	94.4
24-26	4	1.6	1.6	96.0
27-28	10	4.0	4.0	100.0
Total	250	100.0	100.0	

Table 1.2 reveals that 47% respondents are in between 21-22 years old. 40% respondents are in between 18-20 years old. 7% respondents are in between 23-24 years old. 2% respondents are in between 24-26 years old. 4% respondents are in between 27-28 years old.

Table 1.3

Frequency Distribution of the Respondents with respect to respondents' everyday computing skills (n=250).

	Frequency	Percent	Valid Percent	Cumulative Percent
Not at all Familiar	44	22.0	22.0	22.0
Not Familiar	15	7.5	7.5	29.5
Indifferent	15	7.5	7.5	37.0
Familiar	80	40.0	40.0	77.0
Highly Familiar	46	23.0	23.0	100.0
Total	200	100.0	100.0	

Table 1.3 represents that 40% or 80 respondents are familiar with the computer skills. 23% respondents are highly familiar. 8% respondents are showing an indifferent response. 22% respondents are not at all familiar. 7% respondents are not familiar.

Table 1.4

Questions	N	Mean	S.D	t	Sig. (2- tailed)
1	250	3.332	1.502	35.085	.000
2	250	3.584	1.360	41.659	.000
3	250	1.900	.987	30.442	.000
4	250	2.528	1.233	32.428	.000
5	250	3.568	1.387	40.660	.000
6	250	3.836	1.380	43.947	.000
7	250	2.496	1.306	42.335	.000
8	250	1.812	1.095	26.540	.000
9	250	2.048	1.378	23.484	.000
10	250	3.488	1.386	39.785	.000
11	250	2.476	1.539	25.425	.000
12	250	3.332	1.502	35.085	.000
13	250	3.584	1.360	41.659	.000
14	250	3.516	1.558	35.682	.000
15	250	2.480	1.130	34.676	.000
16	250	2.124	1.349	24.892	.000
17	250	3.628	1.271	45.124	.000

Single t-test is used to check the applicability of the data. If values of the data is significant for sample results, in the single t-test we check either this data which is applicable on the sample result is also applicable on the population results or not.

In the above table researcher check the single t-test of the data. Mean values of the variables tells that the average or level of the particular variables. As above table1.4 shows the mean value of 1st component 3.332 means majority respondents give Familiar response towards everyday computing activities. Similarly, 9th component which is distribution of the respondents with respect to respondents' usage of Internet search for specific information has mean value 2.048 shows that most of the respondents "sometimes" use internet search for specific search. Same like, 10th component which is about to Distribution of the Respondents with respect to respondents' most frequent preference of search engine has the mean value of 3.48 tells that majority of respondents prefer to use "Google" as search engine.

Values of standard deviation show the deviation of the variables from their mean value. Values of the t-test show that this result is applicable on the population results in percentage. Value of 1st question which is how familiar would you say you are with everyday computing activities has the value of t= 35.085. This value of t-test finds that 1st component of this study result on the sample is applicable on the population result at 35.085%. This is also shows that this particular question will address the significance of our study by 35.085% over the population results. Similarly, 17th component about to Respondents with respect to respondents considering Google Advanced Search as highly confusing and hard to understand has t value 45.124 shows result basis on the sample is applicable on the population result at 45.124%. When P-value is less than 0.05 means study is under significance results. All questions which is ask to address this study have significance value PV< 0.05 which means this result of the variables on the basis of sample is also applicable on the population result.

9. CONCLUSION

The overall precise conclusion of this survey is that students prefer search engines for searching information online. Students prefer Google search engine, and within Google search engine they search through basic searching mode. They write simply the topic names in the search queries. They do not go into advanced Google search and also find it very confusing as well.

The findings of the survey indicates that majority of the students are familiar with the computer activities. This indicates moderate level skills of the students for using computers. The same is true about web-pages as well. The findings also show that they have moderate familiarity with the website usage.

However, the findings of the survey indicate that most of the students are not aware of designing as well as the creation of the web-pages over the internet. Therefore, from the overall perspective students have knowledge of the computer and web-pages, but they do lack a total command of manipulating the web-pages.

The findings of the survey also indicate that students are usually not familiar with their library web services online. This also indicates that they most of the time need a help, or they even avoid using the library web pages. However, they are familiar with the normal library services within the university.

According to the findings, majority of the students prefer to use search engine for searching any kinds of information. Most of the times students prefer to search information through search engines. However, the results also indicate that students do no bookmark or favorite their web-pages. Finally, within the search engine preferences, majority of the students prefer Google search engine for searching any kind of information.

Majority of the students are of the opinion that most of the time, they are being able to search information through Google search engine. This indicates that the students are rather satisfied by the usage of the Google search engine. The findings also indicate that they prefer Google search engine for their assignment and university works as well.

The findings indicate that on Google search engine, students prefer to search through simple technique. They search through writing the straightforward queries into Google search bar. The survey also shows that students do not use Booleans and any other specific phrases like quotation marks etc. Even though without using the Booleans give maximum numbers of results, but it also increases the time consumption of the online searcher as well.

Finally majority of the students are of the opinion that they do not use the Google advanced search over Google search engine. Moreover, a large numbers of students are of the opinion that Google's advanced search technique is rather confusing.

10. RECOMMENDATIONS

1. According to the findings most of the students are not familiar with using the library web pages. Library web pages are extremely important for the students. They contain information about journals and other authenticated sources of data. This data is even more reliable than the data found on Google or any other search engine. Therefore, the students should be regularly given instructions regarding usage of the library web-services.
2. According to the survey, students do not use Booleans or any other specific terminologies to precise their search. The usage of the Booleans is very important. It can further precise the results, and give more filtered search queries. For example usage of the quotation mark around the phrase gives exact word phrase from the search. Similarly usage of "NOT" actually deducts any undesirable elements from the search queries and so on. In short, the usage of the Booleans can further narrow down the search results for the Google users.
3. Similarly the findings indicate that students do not prefer Google Advanced Search option from Google Search Engine. Students should also use Google advanced search technique in order to enhance their online searching results. Google Advanced Search allows the users to search precisely, in different languages, in different file formats etc. For example if a person wants to search an excel spreadsheets only it can select spreadsheet option through Google advanced Search. Similarly if a student wants to search a PDF files only it can select this option from the Google advanced search option as well.
4. There should be at least weekly discussions among the teachers and students to improve and enhance the searching techniques over the Internet. For example students can share of their problems with searching particular work and by sharing it; they might get a useful solution for it. This can put students and teachers more effectively working together and it can also enhance the students' learning skills even further.

REFERENCES

[1] 100 BEST GLOBAL BRANDS. (2009). 100 BEST GLOBAL BRANDS. (cover story). Business Week, (4148), 50. Retrieved from Master FILE Premier database.

[2] Alexandra, B. (2007, May 23). Google bans internet essays that help students cheat on degrees. Times, The (United Kingdom), 1-2.

[3] Badke, W. (2009). Google scholar and the researcher. Online, 33(3), 47-49. Retrieved from CINAHL with Full Text database.

[4] Becker, N. (2003). Google in perspective: understanding and enhancing student search skills. New Review of Academic Librarianship, 9(1), 84-100.

[5] Ellis, D., Ford, N. & Furner. J. (1998). In search of the unknown user: Indexing and hypertext and the World Wide Web. Journal of Documentation, 54 (1), 28-47.

[6] Foster, N.F. (2007). Studying Students: the Undergraduate Research project at the University. Printed in United States of America: Assoc of College & Research Libraries Publications.

[7] Frechette, J. (2005). Exploring the Political and Economic Structures of the Internet as an Alternative Source of Information. Library Trends, 53 (4), 555-575.

[8] Google voted Best brand of 2003. (2004). BBC News [Electronic Version]. Retrieved November 11, 2004,from http://news.booc.co.uk/2/hi/business/345363.stm.

[9] Griffiths, J.R. & Brophy, P. (2005). Student Searching Behavior and teh Web: Use of Academic Resources and Google. Library Trends, 53 (4), 539-554.

[10] Jansen, B.J., Spink, A. & Saracevic, T. (2000). Real Life, real users and real needs: A study and analysis of user queries on the web. Information processing and Management, 36 (2), 207-227.

[11] Jepsen, E.T., Seiden, P., Ingwersen, P. & Bjorneborn, L. (2004). Characteristics of scientific Web Publications: Preliminary data gathering and analysis. Journal of the American Society for Information Science and Technology, 55 (14), 1239-1249.

[12] Johnson, F., Griffiths, J.R. & Hartley, R.J. (2003). Task Dimensions of user evaluations of information retrieval systems. Information Search 8 (4), 157.

[13] Kleiner, A., Lewis, L. & Greene, B. (2003). Internet Access in U.S> Public Schools and Classrooms: 1994-2002. Washington: National center for Education Statistics Publications.

[14] Marchionini, G. (1992). Interfaces for end user information seeking. Journal of the American Society for Information Science, 43(2), 156-163.

[15] Nielsen, J. (1993). Usability Engineering. Boston: Academic Press Publications.

[16] Poe, J. (2007). A COMPARISON OF ARTICLEFINDER AND GOOGLE SCHOLAR: HOW WELL DO THEY WORK FOR THE DISTANCE STUDENT? Journal of Library & Information Services in Distance Learning, 2(4), 98-102.

[17] Schneider, F., Blachman, N. & Fredricksen, E. (2003). How to do everything with Google. California: McGraw-Hill Professional Publications.

[18] Vise, D.A. & Malseed, M. (2005). The Google Story. (5th Edition). New York: Thomas Arnold Publishing.

[19] Walker, J. (2005). Links and power: The Political Economy of Linking on the Web. Library Trends, 53 (4), 524-529.

[20] Watkins, K. (2008). Return of the Google Game: More Fun Ideas to Transform Students into Skilled Researchers. School Library Journal, 54(5), 46-48.

[21] Walmsey, A. (2008). The numbers game. Marketing, 12. Retrieved from Business Source Elite database.