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Perception towards Web Search Engines and Evaluation of Internet Search Results by Undergraduate Students

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Abstract

The Internet has become a major source of information today, and finding relevant information is a difficult task. The Web search engine is a software program that allows users to quickly retrieve specific information out of millions stored on the Internet. *Purpose:* The main aim of the paper was to ascertain the perception of students towards Web search engines and to determine the criteria adopted when evaluating Internet search results. *Methodology/Approach:* Quantitative research methodology using cross-sectional survey design was used for the study. The population of the study was 65,018 students, of which 462 were sampled. A total of 462 copies of the questionnaire were administered to the respondents, of which 394 were filled and returned. *Findings:* The paper confirmed that the respondents perceived Web search engines as useful and easy to use. In terms of evaluation of Internet results, it was found that the respondents lack knowledge on the criteria used to evaluate information resources. *Recommendations:* The paper recommended that there is need for teaching students the criteria for evaluation of information resources. There is need for librarians of these institutions to be proactive in guiding students on how to evaluate information resources. There is need for the students to discuss among themselves, in a forum, the knowledge they acquired on how to evaluate information resources. *Originality/Value:* The findings would be beneficial to the lecturers teaching information literacy and other related courses, since it explored the attitudes of students towards important retrieval tools and the criteria they adopt when evaluating the search results.

Keywords: Web Search Engines, Evaluation, Internet, Search Results, Students

Introduction

A search engine is a software that has the capability of searching through large volumes of text or other data for specified keywords, and then returning a list of files where the keywords are found. A search engine helps users track down online information on a wide variety of topics that are valuable. It is a software program that searches a database and gathers reports on information that contains or is related to specified terms (Louis, 2012). When using the Internet for research purposes, search engines serve a similar function to a library catalogue, because it informs users about the information stored so that he/she can decide whether to select it or not. The abundance of information currently available on the Internet is unmatched in human history. Given the considerable information options available today, finding reliable information is a complex and challenging task for any information seeker, but especially so for students of tertiary institutions (Hallaq, 2016).

In this era of widespread ICT, for every second, over 100,000 information searches are performed on Web search engines. People use the Web to find information on almost everything, from day-to-day information, such as text, audio, video, audio-visual, and images multimedia. Internet has become a part and parcel of our day-to-day life. However, many questions linger in the minds of many people. How accurate and reliable are

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the information they retrieve from a Web search engine? How does a person make a decision to use information from a particular search engine or Web site? Anyone can publish on the Internet and of course it is easier to find and access the published information on the Internet. This means that the quality of the information one finds on the Internet must be evaluated very carefully, unlike in the traditional media where, for example, a journal article to be published goes through peer review before it is accepted for publication. With a book one can judge the quality by the reputation of the publisher, author, series, and so on (Pérez, Potocki, Stadtler, Macedo-Rouet, Salmerón & Rouet, 2018). However, the flood of raw information on the Internet has not been filtered by peer review or the collaborative efforts of the traditional publishing industry. In addition, there is need for a software that helps users access the information stored on the Internet. It is also important for information seekers to possess skills for selection and evaluation of information on the Internet. Kovacs, Schloman and McDaniel (1994) stressed the need for evaluation of information on the Internet and advised people not to believe everything that is found, but to find its author's background and abilities. Similarly, Kanniainen, Kiili, Tolvanen, Aro and Leppänen (2019) emphasised that reading to learn from online information, often referred to as online research and comprehension (ORC), requires, in particular, skills and strategies for locating, evaluating, and synthesising online information, as well as for communicating one's learning to others. Kovacs (1999) used the terms good stuff and poor stuff. Good stuff described the quality of information on the Internet. Good stuff is any information that is relevant to the information needs of the client, and meets basic quality-of-information standards.

Fritch and Cromwell (2001) asserted that information on the Internet can be published by almost anyone, that there is virtually no filtering of information on the Internet and that filters of information typically present in a print environment (publishing houses, editors, reviewers, librarians/selectors) are often not present on the Internet. Anyone can publish almost anything on the Internet, often bypassing the quality assurance benefits offered by traditional publishing (Kaushik, 2012). Traditional publishing benefits include issuance by an authoritative source, editorial or peer review, and evaluation by experts. There is little or no editorial review of material and no official agency, specialist, or review process for Internet subject matter (Schrock, 1996). Hahn (1997) stressed the need to teach students how to evaluate Internet resources. Bell and Frantz (2014) catalogued criteria to consider when evaluating information resources as authority, timeliness, relevancy, accuracy, and bias. According to Metzger, Flanagin, Markov, Grossman and Bulger (2015), contemporary students are a particularly intriguing group to consider with regard to information credibility issues. Although they have been described as "digital natives in a land of digital immigrants" (Rainie, 2006), they may lack the tools and abilities critical to evaluate information effectively, in part due to their relatively limited development and life experience. While new technology continues to develop and become increasingly affordable, and students have increased access to the Internet, the lack of Internet skills in higher education may be due to the communication gap between what Prensky (2012) refers to as digital natives and digital immigrants. Nearly all educators, especially those in higher education, fall into the category of digital immigrants and "speak" with an "accent" when it comes to digital technology, whereas most students are identified as digital natives, coming to higher education already "speaking" the language of digital technology fluently. He has later recognised digital technology as '"the right stuff" to be teaching our kids today to prepare them for the future" (Prensky, 2012).

Research Questions

This work attempts to provide answers to the following questions:

- What is the perception of students of Kano state tertiary institutions towards Web search engines?
- What are the criteria used by the students of Kano state tertiary institutions to evaluate Internet search results?

Methodology

Quantitative methodology using cross-sectional survey design was employed. A questionnaire was used to gather data from the respondents. The population of the study was confined to tertiary institutions in Kano state that have Internet connection in their libraries, and there were a total of 65,018 in these institutions. The sample size was 462, which was determined using Cochran's formula. The data collected for the study was analysed using frequency

and percentage using Statistical Package for the Social Sciences (SPSS).

Findings and Discussion

This section presents the findings of the study based on the research questions. A total of 462 copies of the questionnaire were administered to the respondents, of which 394 were filled and returned.

Table 1: Perception of Students towards Web Search Engines

Sr. No.	*Statement*	*SA/A*	*%*	*SD/D*	*%*
1	I believe it is important to use Web search engines	320	81.2	74	18.8
2	I believe Web search engines save time	278	70.6	116	29.4
3	I am satisfied with the results provided by the Web search engines	286	72.6	108	27.4
4	I find what I am looking for with the help of Web search engines	295	74.9	99	25.1
5	Web search engines are user friendly	205	52.0	189	48.0

Table 1 shows that a majority of the respondents (320, 81.2%) agreed that Web search engines are important. Similarly, 278 (70.6%) believed that Web search engines save time and 286 (72.6%) indicated that they were satisfied with the results provided by the Web search engines after giving it a command. Finally, a majority of the respondents (295, 74.9%) stated that they found what they were looking for and what they wanted to find with the help of search engines. In addition, 205 (52.0%) respondents indicated that the interface of search engines was user friendly. These findings are encouraging; these results show that the respondents perceived Web search engines as useful and user friendly. There is a tendency by the students to access information from the convenience of their locations. They can also have access to resources published in any period, because most of them are available on Internet platforms. They can also visit reputable institutions of learning anywhere in the world and access their information materials. The results further indicated that students can supplement their lecture notes via tutorials and other information materials available on the Internet. The results depicted that the respondents accepted this vital technology and there is a likelihood of accepting any technology that helps in boosting their academic performances. Therefore, the implication of these findings is that there is a tendency of utilising Web search engines for information retrieval by the respondents, which eventually would have great impact on their academic performance.

Table 2: Criteria Used to Evaluate Internet Search Results by the Students

Please state which of the following you consider as a criteria for evaluation of Internet search results.					
Sr. No.	*Criteria*	*Yes*	*%*	*No*	*%*
1	Affiliation of the author (place of work)	72	18.3	322	81.7
2	Citation and references	85	21.6	309	78.4
3	Date of publication	65	16.5	329	83.5
4	Design and the layout	209	53.0	185	47.0
5	Objectivity of the author	65	16.5	329	83.5
6	Qualification of the author	123	31.2	271	68.8
7	Relevance	254	64.5	140	35.5
8	Scope covered	209	53.0	184	47.0
9	Sponsor of the website	95	24.1	299	75.9
10	Writing style and language used	198	50.3	196	49.7

Table 2 shows the results of the study on the criteria used by the students for evaluation of Internet search results. The table indicates that a majority of the respondents (322, 81.7%) do not consider affiliation of the author as a criteria for evaluation. It also shows that most of the respondents (309, 78.4%) ignore citation and references provided as a way of evaluation. A majority of the respondents (329, 83.5%) do not look at the date of publication when evaluating Internet search results. Further, it indicates that more than half of the respondents (329, 83.5%) do not bother about the objectivity of the author and 271 (68.8%) respondents do not consider the qualification of the author as a criteria for evaluation. Ninety-five (24.1%) respondents do not consider the sponsor of the website as a criteria for evaluation of Internet results. It was also found that a majority of the respondents (209, 53.0%) prepare the design and the layout when evaluating information. It shows that a majority of the respondents (198, 50.3%) consider writing style and language used in the document as a criteria for evaluation of Internet search results. In addition, a majority of the respondents (254, 64.5%) indicate that they consider relevance of the document to their information needs and most of the respondents (209, 53.0%) regard scope covered by the document as a criteria for evaluation.

These results indicate the lack of knowledge on the criteria for evaluation among students of Kano state tertiary institutions. The findings of this study raised a sceptical alarm regarding students' ability to locate and discern high-quality information online. Consequently, this study sought to understand the various criteria used by the students to evaluate the credibility of information found on the Internet appropriately and accurately. The implication of these findings is that students would find it difficult to select relevant information resources that would satisfy their information needs. There is also a tendency to spend a lot of time in searching and selecting information from the Internet. In some instances, users can ignore valuable information material and go for irrelevant ones. These findings were similar to those of Metzger, Flanagin, Markov, Grossman and Bulger (2015) who observed students' critical evaluation of online information; most find the students to be largely uncritical or reliant on inappropriate criteria when seeking information online. Thus, the authors concluded that most of the students were not fully or properly evaluating the information they find online, and some may not even be aware of the need to do so. However, students are still required to build and understand the logical ways of finding information and acquire skills that help them *locate relevant information* to solve their problems. Locating information requires the ability to form adequate search queries for search engines and to analyse search engine results. Without these skills, students are unable to use the Internet efficiently for their learning, because a considerable amount of information on the Internet appears to be questionable or commercially biased. An ability to *critically evaluate online information* is essential. To make informed judgements of the quality of online information, readers need to evaluate the author's expertise and the trustworthiness of online resources (Britt, Rouet & Durik, 2018).

Conclusion and Recommendations

Based on the results collected, it can be inferred that students of Kano state tertiary institutions perceived Web search engines positively; they consider them as tools for searching and retrieving relevant information for their day-to-day endeavours. They are also satisfied with the information provided by the Web search engines; its interface is user friendly. On the other hand, students of Kano state tertiary institutions lack knowledge on the criteria used to evaluate information resources. The major criteria that are used to evaluate Internet search results were not adopted by the students. Therefore, the researcher suggested the following:

- There is need for teaching students the criteria for evaluation of information resources.
- There is need for librarians of these institutions to be proactive in guiding students on how to evaluate information resources.
- There is need for the students to discuss among themselves, in a forum, the knowledge they acquired on how to evaluate information resources.

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