Chapter- I

Present Study

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1.1. Introduction

Information Management could have, and has preceded event without the aid of computers, telecommunication networks, optical technologies and the like, for hundreds, possibly thousands of years. But today in contrast, the application of super computers, online searching, CD-ROM, hypertext, multimedia, hypermedia, videotext, teletext, Internet, teleconferencing, facsimile technology – fax, and the like, for the purpose of storage and retrieval of information in libraries and information centres is well recognized. A technology that would make available both to the information producers and information consumer with adequate, timely, and reliable information instantaneously is indeed an essential support to the development of libraries. The Internet offers a range of new features based on storing, transferring and retrieval. It appears to have enormous and exciting potential. The ability to be able to receive text, graphics and sound from the other side of the world in seconds or minutes is a giant step forward in technology. It emerged as the most powerful medium for storage, retrieval and dissemination of information of E-resources like e-journals, e-books, newsletters, table of contents, preprint, technical reports, library catalogue, discussion forum, courseware, directories, E-databases etc. Indeed, this untested imputation and the benefits that are assumed to derive from Internet use have, to date, provided sufficient justification for a huge investment in Internetworking across the academic, government, military and commercial sectors (McClure and Lopata,1996). Today, the qualitative improvements in scientific and technological
communication are being brought about by the Internet, which has enabled global
connectivity of computers and the developments of various tools and techniques
for networked information provision and access. The traditional library systems
are going to transform into digital library systems. Information seeking is
important for academic professionals who have access to many dedicated
electronic resources. Internet and CD ROM were the most frequently used
IT-based sources and facilities.  

The use of the Internet in the educational environment has enabled easy
access to many resources, and information sharing, therefore has significantly
increased. Moreover, the prevalence of this sharing has brought additional
benefits; these resources can be used in anywhere and at any time. Although the
efficiency of this technology is evaluated with use of proportion of the desired
results in student achievement does not exactly come out and is difficult to
determine. Hence, much research has been conducted over time to understand the
reasons for this situation.  

Due to the wealth of information available, the World Wide Web is
becoming widely used research tool. However, despite the Web's popularity and
wide spread use and the volume of information available, many academic
librarians have reported that students and faculty members often use the Web
inefficiently and appear ignorant of its limitations, failing to recognize issues of
reliability, validity, or authority of Web resources.
One of the most serious and widespread objections against information found on the World Wide Web is that the quality in many cases is doubtful. Mr. Retting rightly points out that every Internet resource is not superior to printed resource because the quality of information available on the World Wide Web varies from poor to excellent. Thus it is librarian's training and expertise in information selection, value-added evaluation, comparison and efficient presentation of information that is most needed regard to Internet resources. There is much room for improvement and further development in the area of qualitative evaluation of Internet resources.

Another major problem associated with web based research is how to determine the quality of the information found on the web. Much of the information available on the web has not received rigorous editing and verification facts through which traditional print or even commercial electronic information sources must go; for instance, traditional papers rely on newspapers to determine overall accuracy and overall quality of their article, journal rely upon peer review process. Because there is no point of control, anyone can put up a websites and publish anything. Without editorial control, document may contain flaws due to bias, mistake, lies, scholarly misconduct and so on.\(^5\)

Therefore in this study an attempt has been made to understand the Internet usage pattern and test the quality of the web pages using the standard web testing tools.
1.2. Need for the Study

With the exponential growth of the Internet, especially the World Wide Web with its graphical interface and hypertext linking possibilities, there is potentially a wealth of electronic information freely available on a global scale. However, just as a library is only as good as its catalogue, the value of the Internet depends to a large extent on the tools developed to search it. The use of search engines like Altavista or Infoseek to find Internet resources on a specific subject often lead to disappointing results. A problem that frequently encountered with this type of search engine is the large amount of resources retrieved, many of which prove less than useful or totally irrelevant. The inaccuracy of the results is mainly attributable to the fact that machine-based indexing and searching lacks context-specific features and does not distinguish, for example, between Turkey, the country, and turkey, the bird. The easy accessibility of internet aggregates the problem. Anybody can publish almost anything on the Web, which is why Web resources vary widely in nature, extent and quality. Unlike most traditional information media, no one has to approve the content before it is made public. The Internet user has to shift through a mass of material to find information of high quality as a result. There is in fact an urgent need for more sophisticated search tools, which take into account issues such as the relevance and quality of Internet resources. However; issues related to the evaluation of such systems to ensure their usability, effectiveness poses a considerable challenge.
Evaluation of web sites is a subject area that has not published a lot of research. With the enormous amount of information and web sites available on the Internet, Users may feel overwhelmed when it comes to evaluating web sites. There are many general web sites that outline basic standards for evaluating Internet information; however, we believe that an educational web site and its information need to be given a specific set of criteria for evaluation. Criteria are defined as consisting of characterizing marks or traits, standards on which a decision or judgment may be based, identifying indications and/or a basis of discrimination. In using the word criteria, we are referring to the standards that help us, to determine whether a web site is valuable. Thus, the use of the word criteria is necessary to judge web sites accurately.

We need to be meticulous in their evaluation of web sites because they will be passing on web site information to impressionable young minds. Anyone is capable of publishing educational materials on the Internet. But, there is one resounding difference between educational materials published on the Internet and educational material found in more traditional sources such as journals and textbooks. Material found in journals and textbooks have been meticulously scrutinized for credibility and accuracy. But, Internet resources are often not subject to such scrutiny. Educators also rely on the educational web site to work technically in the classroom. Misinformation and technical difficulties can cause a great deal of distress for not only the research scholar but for the faculty members.
as well. For this reason, audience, credibility, accuracy, objectivity, coverage, and currency are the major issues educators should focus on when examining the web sites. Aesthetic and visual appeal, navigation, and accessibility are the major issues which focus on when examining the technical aspects of educational web sites.

Many of the criteria outlined in other sites can be included when evaluating educational web sites; however, we must look at these criteria in a different way. We must screen the criteria as first and foremost. Our only priority in determining whether the criteria are fit is to see whether they promote education and learning. According to Trochim⁸, “there is a remarkable absence of studies that examine how websites are conceptualized, developed, and implemented, or that look at the effects of their use. In the haste to construct the World Wide Web we don’t simply have the time to evaluate and reflect on how this technology is being accomplished and the effects it has on the way we live, perform in our jobs, and interact with our environment.

The success of the web is dependent on its quality and reliability. Website performance and analysis is a crucial factor, to test performance, one has to stimulate a large number of users using a website simultaneously. On the other hand, analysis and testing helps us to keep track the rapid pace of changing data on dynamic websites.
In addition, Cheung and Huang (2005)\(^9\) emphasized the effects of the Internet as an effective teaching tool in university education, and proposed that many university teachers publish their course material in the Internet. They suggested that it is insufficient for university lecturers and administrators to use the Internet as a good teaching tool, and that students' Internet use should also be investigated.

Besides above views and facts the following are the incidents support the need for evaluation of web resources.

1. **Bogus Information**

   A 23-year-old community-college student was arrested and charged with fraud today for allegedly issuing a bogus news release that caused Emulex Corp. stock to lose more than $2 billion in value in several hours of trading on 1\(^{st}\) September 2000 in US.


2. **Web Scams**

   The Web site at “unsub.us” mimics the language, look, and navigation of the Web site for the National Do Not Call Registry, a legitimate free service of the US federal government. The unsub.us site is not run or authorized by the FTC.

3. **Falsified Research**

On 26th September 2002 a scientific fraud found at Bell Labs, Articles published and patents submitted based on the misrepresented research data. The findings, in effect, dismiss as fictitious results from more than a dozen papers that had been promoted as major breakthroughs in physics, including claims last fall that Bell Labs had created molecular-scale transistors.

(Source: Seattle University website 26th September 2002,

The above mentioned issues made us to think seriously about accuracy, relevance, timeliness, cost effectiveness etc of information. Therefore the researcher felt to evaluate the web resources in the field of Botany by collecting the opinion of the users about quality of web resources and also with the help of standard website testing tools.

1.3. **Scope of the Study**

The present Study is confined only to the Botany web resources available on the Internet. The proposed study intend to focus on usage pattern of Internet and web resources by the Professors, Readers, Lecturers and Research Scholars of botany who are working in universities of Karnataka and Maharashtra. Further an attempt has also been made to evaluate the quality of Botany web resources with standard evaluation criteria using freely available standard website testing tools.

The study of the electronic information resources is confined to an analytical study with particular reference to Internet and web based resources.
1.4. **Statement of the Problem**

The statement of the problem is “Evaluation of Electronic Information Sources in Botany”

1.5. **Objectives of the Study**

The main objectives of the study are broadly divided into two parts:

I. Evaluation of Web resources using standard website testing tools.

II. Use of Internet and web resources by the research scholars and faculty members of Botany in universities of Karnataka and Maharashtra.

I. **Evaluation of Web resources using standard website testing tools**

1. To evaluate the quality of web resources using standard criteria

2. To find the frequency of updating of web resources

3. To find out the usage trend of Botany web resources over a period of time

4. To find the accessibility of web resources on different Internet bandwidth

5. To recommend the standard practices to evaluate the web resources before hosting the web resources on to the Internet.

II. **Use of Internet and web resources by the Research scholars and faculty members of Botany in universities of Karnataka and Maharashtra**

6. To know the awareness of Internet among research scholars and faculty members, to find the place of Internet usage, type of Internet connectivity and purpose of Internet usage.
7. To identify the obstacles in using web resources among the research scholars and faculty members.

8. To know the opinion of users about the web resources with respect to academic requirements, research activities and gaining knowledge.

9. To know the popular search engines used by the research scholars and faculty members to search web resources on Internet.

10. To know the quality awareness among the research scholars and faculty members while searching and hosting the web resources on Internet.

11. To know the security awareness while disclosing the sensitive information over Internet while purchasing the web resources on Internet.

12. To know the technology and pace holder used by research scholars and faculty members for hosting the web resources on Internet.

13. To find out a possible solutions and processes to use and host the web resources to the optimum use.

1.6. Hypotheses of the Study

Ross defines the hypothesis is a map, a chart and a compass, a set of blueprint. Here researcher tried to formulate the following hypotheses based on the related literature, personal experience of the researcher and objectives of the present study.
1. Age and gender of the users and place of use of Internet is associated to each other.

2. Age and designation of the users and purpose of Internet usage is associated to each other.

3. Age and designation of the users and amount of time spent on use of Internet is not associated to each other.

4. Age and designation of the users and reason for the use of Internet is associated to each other.

5. Age and designation of the users and use of type of web resources are not associated to each other.

6. Designation of the users and subscription of web resources is associated to each other.

7. There is a scope for improvement in quality of botany web resources.

8. Usage of botany web resources has been increased over a period of time.

9. Botany web resources are updated at frequent intervals over a period of time to make latest information available on the Internet.

1.7. Methods of Data Collection

The present research work has two important aspects viz. evaluation of web resources based on the website standard testing tools and the opinion of the faculty
members and research scholars of Botany. Particularly to obtain the data from the respondents again many more methods can be used. So the researcher after analyzing each method of data collection and also considering the merits and demerits of different research methods, the following methodologies have been employed to collect the necessary data to achieve the main objectives of the study.

i) Questionnaire Method

The following methods were planned to collect the data for the research. One the questionnaire was hosted on the web and email alerts are sent to faculty members and research scholars of universities of Karnataka and Maharashtra. There was lot of delay and continuous follow up was required in the process. The faculty members and researchers were also not very keen in answering the online questionnaire.

As there was no good response to the online questionnaires, personal visits were made to the national level conferences and posting of questionnaire methods were also used to collect the data.

In order to identify the survey instrument that could be adopted for the present study literature survey has been conducted and reviewed the literature regarding user of Internet, user of Internet resources, evaluation criteria of web resources, Website evaluations and Web site search engines. It was found that many studies were conducted on uses of Internet resources, and search engines. However a few works has been conducted to understand the research scholar and faculty members’ awareness towards quality of web resources.
Based on this structured questionnaire was designed to collect the data on research scholars and faculty members demographic information. The questionnaire consist of 40 questions primarily in multiple choice answers and these 40 questions were asked under three major sections viz., use of Internet, use of Internet resources and Internet Resources Content Management.

ii) **Website quality testing tools**

For this purpose sample botany websites are collected based on the following criteria:

- The first 10 results of the sites are selected using “Botany” as a search key term on a Google search engine.
- The second set of 10 sites are selected using “Botany E-Journals” as a search key term on a Google search engine.
- The Major 28 Botany topics are used as a search key terms on Google search engine. The top 10 sites are selected for a sample.

Through this search strategy 300 Websites were collated and tested using various website testing tools.

**Tool identification**

Keeping in mind the objectives of the study website testing tools were identified to use against the sample sites, the following were the criteria adopted for selecting the websites testing tools.
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- Relevance of tool to fulfill the research objectives
- Output data
- Free usage of tools
- Web based testing tools

Survey Demographics

- The study of user population includes faculty members and research scholars of Botany from Karnataka which accounts 68 and Maharashtra 47.

1.8. Chapterization

The problem which is getting analyzed in this thesis is usage of Internet, use pattern of Internet web resources, Quality of the websites, frequency of updation and the fit for usage. Thus the thesis core themes are organized in following chapters.

Chapter 1: Present Study

This chapter includes Introduction to the present study, Need for Study, Scope of the Study, Statement of Problem, Objective of the Study, Hypotheses, and methods of data collection and organization of the study.

Chapter 2: Internet and World Wide Web

In this chapter an attempt has been made to provide the comprehensive information on Internet, Search engines, World Wide Web and evaluation criteria.
Chapter 3: Criteria and Tools for Evaluating Web Resources

This chapter explains the various web site testing tools and their capabilities. Here an attempt has been made to introduce the various testing tools used in this research study. Also attempt has been made to show the relevance of these tools to the study.

Chapter 4: Review of Literature

This chapter provides the information on previous studies related to the present topic. All the reviewed articles are presented under three major headings viz. Use of Internet and Internet Resources, Web Search Engines and Evaluation Criteria for Web based Sources.

Chapter 5: Analysis and Interpretation of Data

This chapter provides analysis and interpretation of data in two parts i.e., Part-A and Part-B. Part-A covers evaluation of websites with using standard websites testing tools. While part-B covers the use of internet and web based resources by research scholars and faculty members based on the opinion of the respondents.

Chapter 6: Findings, Suggestions and Conclusion

This chapter covers major findings of the study, suggestions for improving the use of web resources and quality of the web resources. Finally the chapter concludes with a conclusion.
References


