CHAPTER- VI

Findings, Suggestions
and Conclusion

6.1. Introduction

6.2. Findings

Part A: Evaluation of web resources using standard web site testing tools

Part B: Use of Internet and Web based resources by Research Scholars and Faculty members

6.3. Suggestions

Part A: Evaluation of web resources using standard web site testing tools

Part B: Use of Internet and Web based resources by Research Scholars and Faculty members

6.4. Conclusion
6.1. Introduction

The growth of Internet and proliferation of technology has widened the scope of correspondence. You might be aware that an ordinary hand written letter takes a long journey through buses, trains etc. and despite the hard work done by postal department letter gets delivered after 3-4 days. But with the advent of new means, IT, especially email, the situations have changed.

Since last couple of years Internet has become a major source for study, research and development. A statistical analysis of the use of Internet and e-resources has become a hot issue in the field of library study. Internet has become the most popular medium of communication and the basis for personal, economic and political advancement in the present society. It is an efficient tool for finding latest news, views, events, browse library catalogues, indexes, abstracts, exchange of information with colleagues and intellectuals, ideas with experts, join in lively debates or financial and business transactions instantly. Internet has brought people beyond telephone, fax and isolated computers to a burgeoning networked information frontier. The Internet is being used skillfully, to shrink the world and bring information, expertise and knowledge straight on to the desktop.

The library and information professionals have vital role in supplying the relevant information to the right users at the right time in right form. The volume of information on the Internet is growing exponentially and is being regularly
updated with the latest information from all fields. In the 21st Century, the Internet and the particularly World Wide Web has become one of the reference tools for all librarians.

Moreover, WWW offers students, faculty members and research scholars an opportunity to find information and data available all over the world. The web is easy to use; both for finding information and for publishing it electronically. Since a large amount of information is available and because that information can appear to be fairly anonymous, it is necessary to develop skills to evaluate what one will find on the web. In this regard several authors and information professionals have developed criteria for evaluation of Web resources. On the basis of available criteria for evaluation of Web based sources, the present study was undertaken to evaluate web based sources in Botany and also to know use of Internet and web based sources by research scholars and faculty members.

Thus in this chapter an attempt has been made to elucidate the major finding of evaluation study of web based resources, and use of Internet by the faculty members and research scholars. This chapter also provides some of the important recommendations for web resources evaluation methodology, designing the quality of web resources for all type of users and computers.

6.2. Findings

The purpose of the study is to evaluate the Botany web resources and to understand Internet usage pattern by the Botany faculty members and research
scholars from the state of Karnataka and Maharashtra. The findings have been
categorized into following two parts.

1) Part A: Presents the major findings of evaluation of websites with using
standard websites testing tools

2) Part B: Presents major findings about use of internet and web based
resources by research scholars and faculty members of Karnataka and
Maharashtra states

Part A: Evaluation of websites using standard websites testing tools

1. Majority of the sites failed to meet the quality standards. Only 23% of the
sites were able to pass the test against various testing tools.

2. Study found that there is a need to stress on incorporating the quality
standards while developing the web resources

3. There is no substantial increase or decrease in the usage of Botany website
over a period of one year i.e. May 2008 to April 2009. We have seen the
increase in the usage from 5498 Lakh users to 6257 Lakh users which
contributes to 6% increase over a period of one year

4. Though the usage of the web resources are increasing year on year, a
substantial percentage of web resources (20%) are losing their users
5. Majority of the sites failed to meet the WCAG guidelines which contribute to 68% of the sample websites. Even though 68% of the websites failed to meet the WCAG guidelines, it is seen that only 30% of the validations are failed and websites were able to pass the 70% of the validations.

6. 94.6% of the websites have failed to meet only 1 checkpoint out 15 checkpoints for CynthiaSays quality test.

7. Majority of the sites failed to Validator test which is 85%. The Validator tool checks for the W3C web page standard. 83.2 average errors were reported per website.

8. There is a need to improve the quality of website by reducing number of HTML errors on the web pages.

9. Currency of web pages has substantially increased over a period of 10 years from 0.1% in 1996 to 16.85% in 2007.

10. There has been a great decrease in the percentage of sites with no updations, the sites with no updations has been decreased from 88% in 1996 to 10.3% in 2007.

11. Majority of the sites (53%) are beyond the accessibility in lower bandwidths (takes more than 1 minute to load).

12. 8% of the websites takes more than minute to download at higher bandwidth (1.44 Mbps)
13. Majority size of the websites contributes to images (70%) compared with the overall websites. Only 16% of the websites contribute to the text, rest are scripts (14%) and images (70%). This may be the reason for keeping 8% of the website beyond the reach even with a higher bandwidth (1.44 Mbps).

14. Majority (75%) of the sites failed to WebAim test.

15. 9.47 average errors were reported per websites for WebAim test. This implies 75% of the websites failed to provide uninterrupted access to all classes of users.

16. Majority (62%) of the sites failed to Valet test. 5.51 average errors were reported per websites for Valet testing tool.

17. “Scripting” (78% of the websites completely implemented) “HTML standard” (35.7% of the websites completely implemented) are the most implemented HTML parameters on the websites. (Results of the FAE Tool)

18. Styling (69.2% of the websites have not at all implemented) and Navigation and Orientation (85.3% of the websites partially implemented) are the least implemented HTML parameters on the websites. (Results of the FAE Tool)

19. Among the parameters of Navigation and Orientation, majority of the websites have completely implemented the Frames (80.3%), Access keys (73.7%) and Data labels (71.3%). Majority of websites have not at all implemented the default language (68.3%) and titles (47.0%). (Results of the FAE Tool)
20. Majority of the sites have completely implemented text equivalents for decorative images (42.3%) and image maps (78%). Majority of the websites have not at all implemented the text equivalents for informative images (42.7%). (Results of the FAE Tool)

21. Majority of the websites have completely implemented the scripting parameters i.e. Onclick (76.7%) and Onmouseover (64.7%). (Results of the FAE Tool)

22. Majority of the websites have partially implemented the text styling (61%) Majority of the websites have not at all implemented the layout tables (45.7%). (Results of the FAE Tool)

23. 7.3% of the websites were able clear all the parameters of HTML Help and no errors found on these sites.

24. From Error perspective majority of the websites had HTML errors ranging from 1 to 10 (27.7%).

25. Average 22.82 HTML standard errors were found on the websites.

**Part B: Use of internet and web based resources by research scholars and faculty members of Karnataka and Maharashtra states**

1. Table 5.49 clearly supports the statement that in today’s world people are more dependent on the Internet for their information needs. Now those are all the gone days where the usage of Internet was limited when compared with print material. 99% of the average respondents are using the Internet for their information needs
2. Non availability of the Internet services is no more a reason for not using the Internet resources. A very small percentage (1.5%) of the sample felt that they don't have a need to access to Internet resources.

3. Institute/Work area is preferred place for the university staff and research scholars. During this study we analyzed the responses for the place of Internet statewise, Agewise and genderwise. In all analysis the Institute/work area is preferred place of Internet usage. This shows that the latest development in providing Internet at universities is helping the faculty members and researcher scholars to fulfill their information needs.

4. Usage of Internet cafés for the information search by the faculty members and research scholars is the last preferred place in most of parameters.

5. Very small number of female faculty members and female research scholars use Internet at home, 30% of the female respondents are not using the Internet connectivity at home.

6. It is evident that research scholars and academic staff are using the Internet largely for gaining knowledge and to fulfill academic requirements.

7. Even though majority of the Internet sites are contributing in the area of entertainment and shopping however these two purposes are least preferred option for using Internet.

8. Majority of the Internet usage time is spent on gaining knowledge and to fulfill the academic purposes.
9. Very small amount of time is spent on the areas like FTP, shopping and entertainment.

10. Most of the respondents use the high speed Internet facility.

11. However a quite significant percentage of respondents (17.5%) still use dial-up facilities to access Internet resources.

12. Most of the respondents have learnt Internet during their studies (63.25%) through friends and colleagues (48%).

13. Manuals and brochures (7.6%) are not the preferred material for learning Internet by the respondents.

14. Majority of the respondents have rated very good (46.25%) or excellent (35%) for their Internet experience. Most of the respondents are happy with Internet experience.

15. Easy to use and updated/latest information are primary reason for using the Internet resources.

16. Quality of the resources stands next preferred option for using the Internet resources.

17. Timely availability and cost effectiveness means are the least preferred options to use the Internet services.
18. Search Engines and Browsing sites regularly are the preferred options for searching the information on Internet

19. Links referred in the reference materials or articles and by personal communication are the least preferred options for locating the information on Internet

20. Google is the preferred search engine by the respondents

21. Majority of the respondents use the search strategies (87.65%) while searching for the information. Still around 12.35% of the respondents are not using the search strategies in their work related activities.

22. ‘and’ & ‘or’ are the most preferred search strategies by the respondents.

23. Majority of the respondents use the advance search strategies (71.4%) while searching for the information. Still around 28.6% of the respondents are not using the advance search strategies in their work related activities.

24. “Use Exact Phrases” & “Search on file types” are the preferred advance search options for searching information on internet.

25. E-Journals, Conference proceedings, E-books, Encyclopedia are the preferred type of web resources on the Internet

26. The least used type of web resources are Bibliography, Biography and Handbooks/manuals
27. Coverage of information and usefulness are the highly rated by the respondents for the web resources. Graphics/media and consistency have been rated very low by the respondents for the web resources.

28. Respondents feel that the information consistency is not accurate on the web resources.

29. Majority of the respondents are dependent on the known URL of the sites to check the authenticity of the web resources.

30. It's also noted that very few percentage of respondents check whether the content is free from viruses, spyware and Malware.

31. Only very few respondents (24.75%) are purchasing the information on Internet and majority of the respondents are dependent on free web resources.

32. Comparatively more Readers and Professors (28.6%) are purchasing the information on Internet when compared with Research scholars and Lecturers (19.7%).

33. Transactions are secured and encrypted and authenticity of the website through digital certificates are considered as most used security features while purchasing web information resources on Internet by the respondents.

34. Complete trust in the Internet and lack of time are major reasons for not considering the security features while purchasing the information on Internet by the respondents.
35. Only a few percentage (17.65%) of respondents host the web pages on Internet.

36. Majority of the web pages created by respondents are created static web pages or follow the institutional technologies for creating web pages.

37. Majority of the respondents (55.1%) use their institutional web servers or shared Internet web servers for hosting their web pages.

38. Majority of the respondents use HTML (64.75%) technology for creating web pages.

39. Quality of Web pages, Alt text to images, Styling using CSS considered to be most used factors while creating web pages by the respondents.

40. Compatibility with different web pages is least considered factor while creating web pages.

6.3. Suggestions

Based on the findings of the study, in this section an attempt has been made to suggest a few recommendations, which help to a creator or designer of the web site to make web site more interactive, accessible and error free. It will also be useful to the users of the web based sources for optimum use.
Part A: Evaluation of websites using standard websites testing tools

1. The study shows that quality is the least considered factor while creating and hosting web resources on Internet. There is an urgent need to ensure the quality of the web pages are taken care while creating and hosting web pages. It's also recommended to have global body to check the quality of Internet resources before hosting.

2. Cynthiasays tool helps to evaluate the web resources for disabilities as per the 508 standards. Only 5% of websites is designed for all types of systems. To make the web resources reachable to all type of users, there is a need to check the websites for disabilities before hosting on Internet.

3. Majority of the HTML pages hosted on the Internet have errors. There is a need to check for HTML errors before hosting them on to the Internet.

4. Even though major decrease in the percentage of web resources with no updataions, still substantial percentage of websites are not updated at frequent intervals. There is need to make this aware to users and users need to check for updations before using them for their information needs.

5. Web designers are concentrating less on textual information and including more images to the web resources. This is making the website heavy and taking a lot of time to download, even with high Internet bandwidth. Web designers need to use fewer images to make the web resources available even at a low Internet bandwidth.
6. Majority of the web resources fail to provide Navigation and styling features. Web resource creator need to properly implement Navigation and styling to ensure all information on the web are accessible to all type of users.

7. Title and subheadings are not included in the majority of web resources; additionally the default language is also not included in the web resources. Web designers need to include title and sub headings along with default language.

8. Majority of the informative images are not incorporated with alternative text. Web designers need to ensure text equivalents which are incorporated for the all type of images.

9. Text styling (CSS) and Layout styling is partially implemented in majority of the sites. Web designers need to ensure scripting properly which is included on the web resources.

10. There is an urgent need to include the creating quality web resources in the University academic curriculum to increase the quality of web resources on the Internet.

**Part B: Use of internet and web based resources by research scholars and faculty members of Karnataka and Maharashtra states**

1. Every faculty members and research scholar is dependent on the Internet. Even though the availability of Internet services is not a problem but there
is a need for universities to promote hosting of their resource on the Internet.

2. Even though majority of the university faculty members and research scholars are using the high speed Internet, there is a substantial percentage of users who still use low speed dial up facilities. There is need to provide a high bandwidth of internet services at universities to ensure all web resources are available to the users as and when required.

3. Usage of Internet Training programs is not effective among Faculty members and research scholars. Universities need to put more efforts for Training faculty members and research scholars in usage of Internet resources.

4. From the study it was evident that respondents are only dependent on Google search engine for searching information on Internet. Knowledge about the special search engines is proven to be poor. Universities need to conduct special training programs to introduce types of search engines for the best use of Internet resources.

5. Even though majority of the respondents are aware of search strategies and advance search options. Substantial percentage of respondents are still don’t use the search strategies and advance search options. There is a need to increase the awareness in using the search strategies and advance search options for effective use of search engines.
6. Majority of the respondents feel that the web resources are not updated frequently and many a times doesn’t provide latest information. The web resource owners need to ensure that the web resources are updated with latest information.

7. Very few respondents are purchasing the information on Internet. They are just dependent on the free web resources for their information needs. In today’s environment most of the printed information is available on Internet as an e-copy for purchase. There is a need to increase the awareness of purchasing the information on Internet. Further majority of the respondents are not considering the security features for purchasing the information as they completely trust the Internet. There is also need to bring the awareness of Internet security while purchasing information on Internet at universities.

8. Majority of the respondents are only the users of Internet resources, which restrict the collaboration and sharing of web resources on the Internet. Therefore, there is a need to train the university faculty members and research scholars in hosting of web resources on the Internet.

9. Majority of the websites hosted are simple static pages and creating interactive websites are beyond the capability of faculty members and research scholars. This restricts the web pages to one way communication. There is a need to include in usage of simple ways of creating interactive web pages for effective communication.
6.4. Conclusion

The present study is a humble attempt to find out the quality of the web resources with standard evaluation criteria viz., audience, credibility, accuracy, objectivity, currency, visual appeal, navigation and accessibility. Various evaluation methods have been proposed, but this study utilizes some of the useful checklists/criteria for evaluating information found on web. The results of this study can be useful for information scientists studying and/or working with portal-based retrieval of information and also for the designers and developers of future online interactive information retrieval systems. The evaluation framework should be taken as starting point for further development and refinement by including functionalities which are not covered. Also features need to be critically evaluated with the user interfaces of each portal to find which resources have more user-friendly features and best suited to satisfy the information needs of target users.