

WEB CONTENT ANALYSIS OF IISER LIBRARY WEB SITES IN INDIA: A COMPARATIVE STUDY

Susmita Das,

Junior Research Fellow,
Department of Library and Information Science,
Assam University, Silchar
Email- susmitadassilchar@gmail.com

Sumita Das,

Librarian
District Institute of Education and Training,
Hailakandi, Assam
Email- sumitadas153@gmail.com

Abstract: For effective user services, the role of the library web site and the variety of its contents are very important factor. World Wide Web (www) played an important role by bringing many categorical changes of how to we do our day to day activities. Information and Communication Technology (ICT) brought paradigm shift of how we process information, how we deliver it. The present study focuses on the issues regarding the web content uploaded on the library websites of IISER libraries.

Keywords: Content analysis, web content analysis, World Wide Web, Web 2.0, IISER's, Library Websites, India.

1.0 Introduction : For effective user services, the role of the library web site and the variety of its contents are very important factor. Here World Wide Web (www) played an important role by bringing many categorical changes of how to we do our day to day activities. Information and Communication Technology (ICT) brought paradigm shift of how we process information, how we deliver it. Today technology is highly versatile and shifting at very fast pace. The growth of obsolescence of information is coping up very fast. What is new today may become old tomorrow. It is a matter of great challenge for libraries to cope up.

Indian Institute of Science Education and Research (IISER) libraries are the intellectual heart and soul of scientific studies of students and research scholar. They have a goal to create quality education and research in basic sciences. IISER libraries are devoted to students, researchers, and teachers in sciences in an intellectually dynamic environment of research and to make education and career in basic sciences more eye-catching by providing variety of services in integrative learning of sciences. In recent years electronic publishing has been on a great demand for remote and online access for learning material in higher education. Scientific and research library users daily require up-to-date information such as full-fledged access to full text databases, research article, papers, e-database, e-sodhsindhu services etc. which can be searched, browsed and printed from desktop of library web site.

The impact of internet, web portal, repository of electronic information resource provided a great impact on library web services. In an academic environment, library websites represents the actual knowledge hub to provide right information in right format at the right time to the users.

2.0 Web 2.0

It is the duty of the library website to provide current and speedy information to the user. In it the role of WWW is of huge value since most of the information is retrievable through web only. Websites now-a-days mostly used for displaying variety of services and promoting their parent institute. Library websites also does the same. For effective usability and creditability uplifting of the library as well as the institution, the role of library website cannot be ignored. But having a library website is not enough to attract users. Of course it will give add on but to retain those users, the dynamic upgrading of the websites is a must. Web 2.0 is the dynamic up gradation of web 1.0. Web 2.0 is built on user driven and participatory web technology. Web 2.0 facilitates two way interactions, enhances security and interoperability. Web 1.0 only provided control from one side, i. e., from publishers end, how the content to be used or displayed. The user had no role in that. They could not take participation in web 1.0. But www with help of advance ICT, users could take participation in the web by liking, tagging, sharing, posting, commenting, reporting etc. Some Web 2.0 tools include Wikis, Instant messaging,

Rich Site Syndicate (RSS) Feed, Mash ups, SMS Enquiry Service, Social Networking Sites like Facebook, Twitter, LinkedIn, weblogs, Social content creation sites like Instagram, Pinterest, Snapchat etc. Web 2.0 provides two way environments for information storage, creation and dissemination, feedback that were not possible in web 1.0.

3.0 Library 2.0

Earlier libraries were used to consider as store house of books. But gradually with the advent of www and ICT the situation dynamically transformed into an environment where the total process of information generation, storage and dissemination is been done with the help of web 1.0 and now with web 2.0 tools. Libraries are the prime face of any institution. So it has the responsibility to accept the changes that have taken over the years in terms of web 2.0. Web 2.0 tools are acknowledged by the library fraternity and have been widely used invariably (Khalid Mahmood, John V. Richardson Jr, 2011). Michael Casey first coined the term 'Library 2.0' in September, 2005 which was based on the concept of Web 2.0. Library 2.0 includes a variety of technological tools and techniques that can be used for providing better mutual environment for information sharing. The library 2.0 is a moulded form that has the ability for user participation in generation of both physical and virtual content by consistently evaluating services on the web.

4.0 IISER Library

The Indian Institutes of Science Education and Research (IISERs) are a group of leading science education and research institutes in India. Ministry of Human Resource Development (MHRD), Government of India, created seven (7) IISER centre's to facilitate education and research. These are namely IISER Kolkata, IISER Pune, IISER Mohali, IISER, IISER Thiruvananthapuram, IISER Tirupati and IISER Berhampur. All the IISER centre's library aims to acquire, process, store, disseminate and preserve all information with the latest technologies available. The IISERs represent a unique initiative in India where teaching and education are integrated with state-of-the-art research in an intellectually vibrant atmosphere of research.

5.0 Scope of the Study

For this study we have chosen only IISER libraries of India. There are a total of 7 IISER institutes in India. Following are the list of IISER libraries taken for the study:

Sr. No.	Names	Year	Websites
1	Indian Institute of Science Education and Research (IISER), Kolkata	2006	http://www.iiserkol.ac.in
2	Indian Institute of Science Education and Research (IISER), Pune	2006	http://www.iiserpune.ac.in
3	Indian Institute of Science Education and Research (IISER), Mohali	2007	http://www.iisermohali.ac.in
4	Indian Institute of Science Education and Research (IISER), Bhopal	2008	https://www.iiserbhopal.ac.in
5	Indian Institute of Science Education and Research (IISER), Thiruvananthapuram	2008	http://www.iisertvm.ac.in
6	Indian Institute of Science Education and Research (IISER), Tirupati	2015	http://www.iisertirupati.ac.in
7	Indian Institutes of Science Education and Research (IISER), Berhampur	2016	http://www.iiserbpr.ac.in

6.0 Objectives of the Study

The main objective of the study is to determine the information content on the library web pages of IISER library web sites of India for better accessibility and use. The study aims are:

- To assess the content of IISER libraries website;
- To verify the basic information about the library on library web page;
- To know the existing services & resources provided on the websites of IISER Libraries;
- To investigate the usability of IISER library websites with the identified criteria for the verification of validity, reliability & usefulness;
- To suggest measures for improvement of websites.

7.0 Literature Review

(Kumar & Mir, 2017) did a content analysis study on central universities library websites of central region of India. They concluded that central university library websites of central region have wealthy collections of E-books, E-journals, E- databases but only IGNTU library has directly link on parent homepage.

(Verma & Brahma, 2017) did a webometric analysis on 9 selected library consortium websites. They correctly pointed out that the total number of webpages included in the website, authority, internal & external links are effective to calculate the web impact factor of the website and to rank it globally.

(Verma & Brahma, 2017) in their study of 10 central universities in North-East India tried to rank the websites by calculating Web Impact Factor (WIF). Their study revealed that overall Web Impact Factor of all central universities of Northeast India is very low. Mizoram University (MZU) occupies at top position with 83.54 SWIF, 52.73 IWIF and 30.80 EWIF compared to other Central Universities in North-East India.

(Savitha, 2016) in her study found that each deemed university library websites provides information about their institution, Library and copyright while only a few of the deemed university use Social Networking services like Facebook and twitter.

(Haridasan & Uwesh, 2014) commented after their study that use of graphics and animations on library websites is effectively helpful to attract users to search and browse its content. They also stated that libraries with the help of web 2.0 applications such as RSS and SNS's like Facebook, twitter etc. can help to promote the website.

(Thanuskodi, 2012) in his paper tried to conceptualise the four main areas of webometric research i.e., Web page content analysis, web link structure analysis, web usage analysis and web Technology Analysis through a study of webometric analysis in selected institutes of national importance websites in India. There he found that majority of institutes did not mentioned their website updating date.

8.0 Need For the Study

In today's era of vast information explosion websites plays vital role in disseminating access information resources. Websites are ideal tools for information dissemination that are specific to certain category of users. So it is essential to evaluate the websites against authority, authenticity, currency and latest technologies employed by them.

The researchers expect that IISER library websites has the responsibility to provide updated and genuine information to its users. The study is also based upon the evaluation of those websites compatibility using latest web 2.0 tools for providing better services.

9.0 Methodology and Data Collection

For the purpose of the present study, the researcher has done an evaluative mode of study using a checklist comprising 62 items for evaluation of the web content

9.1 Data Analysis**Table 2: General Library Information**

Sr. No.	Aspects	Yes	No	Percentage of Yes (%)
1	About Statement	7	0	100
2	Mission Objective	5	2	71.43
3	Working Hours	7	0	100
4	Information on Membership	7	0	100
5	Library Regulations	6	1	85.71
6	Different Sections of Library	2	5	28.57
7	Library Services	7	0	100

In data analysis part of Table 2, it is found that all 7 IISER libraries, 8 (100%) of libraries has 'About Statement' while 71.43% has stated their 'Mission Objective'. 8 (100%) libraries have 'Information on Membership', 'Working Hours', and 'Library Services'. It is found that 6 (85.71%) of libraries provided information on 'Library Regulation', but only 2 (28.57%) of libraries has mentioned different library sections on their webpage. Figure 1 depicts the same.

Table 3: Authority

Sr. No.	Aspect	Yes	No	Percentage of Yes (%)
1	Website updating date	3	4	42.86
2	Links to internal/ external advertisement	2	5	28.57
3	Links to mobile page	0	7	0.00
4	Page under construction information	1	6	14.28
5	Name of the title page in the top bar	7	0	100
6	Error Links?	1	6	14.28
7	Links to home page	7	0	100
8	Website index	0	7	0.00
9	Sub web Pages(More than 4 pages)	6	1	85.71
10	Multilingual Content	5	2	71.43

Table 3 reveals that out of 7 IISER Library, 3 (42.86%) Library has 'Website updating date', 2 (28.57%) of the websites are linked with 'internal or external advertisement'. No IISER library website has mobile version website, 1(14.28%) website has 'page under construction' and 'error links'. All the websites has their 'name of the title page in the top bar', 6 (85.71%) websites are having more than 5 pages, all the websites has 'links to home page', it was found that no website has 'website index' menu, 5 (71.43%) websites are offering multilingual information on their webpage.

Table 4: Information on Library Resources

Sr. No.	Type	Yes	No	Percentage of Yes (%)
1	Books	7	0	100
2	Print Journals	4	3	57.14
3	Electronic Journals	6	1	85.71
5	Back Volumes of Journals	0	7	0.00
6	Non-Print Media	6	1	85.71
7	Full text e-journals	4	3	57.14
8	Links to e-resources	7	0	100
9	Links to e-books	4	3	57.14
10	Bibliographic/Online Databases	7	0	100
11	Open Access Journals	4	3	57.14
12	Licensing Information	7	0	100
13	Copyright Issue	7	0	100

Table 4 states all the Libraries have information about 'books', 'Links to e-resources', 'Bibliographic/Online Databases', 'Licensing information' and 'Copyright issue' information provided on the websites. While 4 (57.14%) Libraries have 'print journals', 'Full text e-journals', 'Links to e-books', and 'Open access journals'. 6 (85.71%) Libraries have 'Electronic journals'. None of the Library provides information on 'Back Volume of Journals'.

Table 5: Current Awareness Services

Sr. No.	Types	Yes	No	Percentage of Yes (%)
1	New Arrivals	4	3	57.14
2	Latest Notifications	3	4	42.86
3	RSS Feed	0	7	0.00
4	Links to SNS	3	4	42.86

In Table 5 we can analyse that 3 (42.86%) libraries are providing News on 'Latest Information' and 'Links to SNS'. While only 4 (57.14%) Libraries are providing 'New Arrivals' information. It was also found that no library provides RSS feed in their website.

Table 6: Website Classification by Design Master

Sr. No.	Design	Yes	No	Percentage of Yes (%)
1	Graphical Interface	7	0	100
2	Animations	4	3	57.14
3	Site map	3	4	42.86
4	BG and Font coloring Effects	6	1	85.71
5	Downloads option	4	3	57.14
6	Hit Counter	2	5	28.57
7	Photo Gallery	2	5	28.57
8	Text-Only Version	3	4	42.86
9	Site Designer	1	6	14.28

Table 6 reveals that 7 (100%) libraries have ‘Graphics’ in their site, while 4 (57.14%) have ‘Animations’ and ‘Downloads option’. 3 (42.86%) websites have ‘site map’ and ‘Text only version’. 6 (85.71%) websites have ‘BG and Font Coloring Effects’. 2 (28.57%) libraries has ‘Hit Counter’, and ‘Photo Gallery’ while only 1 (12.5%) website has ‘site designer’.

Table 7: Contact Related Query

Sl. No.	Aspects	Yes	No	Percentage of Yes (%)
1	Contact Number of Staff	6	1	85.71
2	Postal Address	4	3	57.14
3	Email id contact	6	1	85.71
4	Suggestion Box	0	7	0.00
5	Feedback	0	7	0.00
6	User Education/Help	5	2	71.43
7	FAQ’s	2	5	28.57
8	Job Vacancy	2	5	28.57
9	Events	2	5	28.57
10	Login Page	2	5	28.57

Table 7 shows that 6 (85.71%) websites provides the contact number of staff, and Email id contact, 4 (57.14%) websites provide Postal Address, while 5 (71.43%) websites provides User Education/Help, 2(28.57%) websites provides FAQs facility, Job Vacancy, Events, Login page and no website provide suggestion box option and feedback.

Table 8: Search Criteria

Sl. No.	Aspects	Yes	No	Percentage of Yes (%)
1	Search Facility	6	1	85.71
2	Links to External search Engine	1	6	14.28
3	No. of external Links (More Than 5)	7	0	100
4	Web OPAC	4	3	57.14
5	A-Z title List	4	3	57.14
6	Publisher Wise List	4	3	57.14
7	Subject Wise List	3	4	42.86

Table 8 shows that 6 (85.71%) websites have search facility while all the websites has No. of external Links (More Than 5) 7 (100%). Each of 4 (57.14%) websites has Web OPAC, A-Z title List, Publisher Wise List, Subject Wise List. And only 1 (14.28%) website has Links to External search Engine.

Table 9: Search Engine Retrieval Ranking

Sl. No.	Rank	Yes	No	Percentage of Yes (%)
1	1 st Rank on Google Search	7	0	100
2	1 st Rank on Yahoo Search	7	0	100

Table 9 depicts that all the websites in Google and yahoo search engines provide 1st rank in with keyword search such as “IISER library of < particular state name>”.

10.0 Suggestions

Further studies can be done on this topic on other criteria's for website evaluation such as 'user-driven interface', 'dynamic tools', 'accurate information', etc. The study revealed many positive and negative facts about particular websites of IISER libraries of India. The study mainly discovers that building a library website and maintaining it is not one time work. The results show us that the libraries are still on the verge of coping up with the latest web technologies to provide better user oriented services.

The following suggestion are made for betterment of library websites based on the results found

- 1) Majority of the websites don't have the information about “Different sections of the Library”. Libraries should provide adequate information about different sections of the library to the users.
- 2) “Website updating date” must be provided regularly to bring more consistency to the contents of the website.
- 3) Links to internal/ external advertisement should be there to increase user access to the page.
- 4) No website has mobile version of their website. Since, most of the users access website from their phone, a better mobile version of the website should be developed.
- 5) A website index should be provided in the website to search the contents more efficiently and quickly.
- 6) Error links must be removed as it creates hindrances to the users.
- 7) No website provides information regarding their 'Back Volumes of Journals'. This should be done judiciously
- 8) Though all the websites has links to e-resources but only a few of them has provided information regarding 'Full text e-journals' and 'Links to e-books' and 'Open Access Journals'. There should be more links included in the websites.
- 9) More links to 'Latest Notifications' and 'Links to SNS' should be given in the websites.
- 10) No library website had connected to 'RSS Feed' service. It should be done to make users more aware to the latest news, updations etc.
- 11) 'Hit counter' and 'photo gallery' content to be added more to the websites.
- 12) Only one website mentioned their 'Site Designer'. This situation should be avoided.
- 13) No website has the option for 'Suggestion box' and 'feedback'. For better service providing these links should be given.
- 14) One website gave 'Links to External search Engine'. 'Links to External search Engine' like google, yahoo bing etc. brings more accuracy to the website.
- 15) All the websites must provide 'Web OPAC', "A-Z title list", "Publisher wise list" and "Subject wise list".
- 16) Only a few websites provided information regarding 'FAQ's', 'Job Vacancy', 'Events', and 'Log-in Page'. This information should be sufficiently included and updated.
- 17) For better service providing and user accessibility, library professional should create and maintain a set of criteria's so that the website should never lack users interaction.
- 18) In order to achieve the above, librarians should adopt more and more web 2.0 tools.
- 19) Each library website should be regularly tested for its usability and quality for better service providing.

11.0 Conclusion

IISER libraries are dedicated to students, researchers, and teachers in sciences. IISER library websites are very important tool to access Information resources for their students, researchers and faculties. The research shows the content available all IISER library websites of India. It is found in the study that there are many areas to improve to fulfil the needs of their users. Websites must be more informative and eye-catching. Users should easily access the contents provided in the website as well as many web 2.0 tools can placed to attract new users. Most of the websites has information regarding their course but none of the website has extra links to materials such as links to open access journals. This should be developed judiciously so that website gets more attention from the users.

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