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Web Based Library and Information Services by University Libraries of West Bengal: a comparative study

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Abstract

This paper highlights the web-based library and information services provided by the selected ten university libraries of West Bengal. Website of an institution plays a key role in information dissemination and is designed to serve as a remote access point. This study has been conducted by the information given in the websites of the selected ten university libraries of West Bengal. The comparative technique has been conducted to examine the contents enclosed in university website and also fixed the criteria for the evaluation of websites for classification of missing links. This present study affirm that all the university libraries have mentioned information related to introduction 10 (100%), library hour, rules, membership, services and reprography 9 (90%), Library fees and other charges 7 (70%) on their websites. The study reveals that Vidyasagar University scored forty four (44) out of forty nine (49) which is placed first rank whereas West Bengal State University placed last position with twenty (20) out of forty nine (49). Lastly, this study also suggests some points to create a good academic library website.

Keywords: Library and information service; Information Communication Technology; Web resources; Library resource; Library website; University library.

1.0 Introduction

University library is the cardinal point as well as an academic institution of any university where users must be supported by teaching and learning activities. The methods of providing library and information services in the university have changed in recent years due to the development of Information and Communication Technology (ICT). University libraries are adopting new technologies to provide the best services to their end users. The web technologies can offer a better platform to any institution and help it to perform effectively. Website of an institution plays a key role in information dissemination and is designed to serve as a remote access point. Now the libraries are shifting from traditional to digital environment and the improved the access of digital information resources more sensible and more attractively. The web-based libraries are receiving a bunch of web-based feedbacks from their effective users. So libraries also introducing their services on the websites, a marvelous quantity of content and the system has some permanence over time.

University libraries prominently may provide web-based information like notifications regarding library services, e-books, e-journals, e-database, Web OPAC, video lectures, e-study materials and previous year e-question papers etc. There are many educational institutions in West Bengal. The selected university libraries of West Bengal have been chosen for the present study and it will focus on how the university libraries are providing the web based information to their users.

From 1990s, libraries are applying ICT in everyday jobs and functions of the libraries and offer best services by using modern tools and technologies similar to website design and link resources. Librarian's main goal is to provide all information about library resources and services through library website. In addition, libraries successfully established relationship with their users and understanding their requirements. ICT and use of library website helps to improve better services to users. Users' approaches and interests have been changing day-by-day due to the availability of huge information resources in the World Wide Web and users are always asking for advanced as well as innovative type of library services and these are;

a) Access 24x7 of e-books, e-resources and databases.
b) Energetic learning and teaching services behind to current education system.
c) Useful links related to their area of interest.
d) Customized library services like Digital Reference Service (DRS)

2.0 Literature Review

Some scholarly works on web based library information services are done in different types of it, their content analysis, evaluative studies etc. This present study was summarized by some related literature and synthesized by some key interpretations on web based library information services.

Kiran and Diljit (2012) investigate the factors of web-based library service quality, with an importance on how library users observe the quality of library services. Pareek and Gupta (2012) were examined the contents and design of academic library websites of Rajasthan. Bao (2003) in his study addressed the United States libraries are providing additional library services through design and development of library webpage. The author also discussed United State academic libraries provide web-based reference services and they guide to users about accessibility the resources. Kanamadi and Kumbar (2006) discussed the library portal and web-based library services of Management Institute in Mumbai. They explore the accessibility, importance and extent of the library information on the institute website. Another study by Shukla and Tripathi (2010) carried out a comparative study to evaluate the 20 central universities and 19 institute of national importance including IITs and IIMs library websites. The researcher set a fixed criteria to examine the library websites i.e. Overall Website Performance Calculation (OWPC) and Criteria-wise Website Performance Calculation (CWPC). Ali et al. (2018) conducted a study on the status and usage of the web based library services of 13 Indian Institute. The researcher set a checklist to examine the web based library

services. Another study by Rahman and Batcha (2020) highlighted the contents of the selected college library websites of Delhi University and established a fixed checklist to evaluate the library websites. Brar (2016) analyzed the library and information centers are providing web-based information and resources. Madhusudhan and Nagabhushanam (2012) investigate a study on web-based library services of selected Indian Universities and how the universities offer the accessibility of online resources. According to Vijayakumar et al. (2009) examine the selected seven IITs library web-base library services and establish all the IITs have set a common goal for library services. The IIT's library websites need to revamp and develop the content of library resources. Another study by Kaushik (2015) the content and quality of a library website is an important issue to disseminate the information. The study explored the selected National Institute of Technology library website, how these institutes provide essential information and library services. The researchers suggest the library websites need reshape for more useful and enlightening library services. Onteru and Rekha (2019) evaluated a study on the engineering college library website of Andhra Pradesh. The researcher found that all the libraries provide basic information about the library services. They highlighted library websites are not updating in regular mode.

3.0 Objectives of the Study

The main aim of this study is to examine the development and content of library websites. The study analyzes the library information and services available on library websites which help library users. The specific objectives of the study are as follows:

a. To know the availability of university library websites in West Bengal;
b. To identify the design and content of university library websites;
c. To analyze the existing web-based information and services offered through university library websites;
d. To find out the links to the social networking sites provided through the university library websites under study;
e. To know the different features of the university library website;
f. To find out the rank of the university website;
g. To give suggestions and recommendations for further improvement of web-based library services.

4.0 Methodology

This study has been conducted by the information given in the websites of the selected university libraries of West Bengal. In addition, a comparative technique has been conducted to examine the contents enclosed in university website and also fixed the criteria for the evaluation of websites for classification of missing links. Other minor analysis techniques are also conducted to support the concepts designed by other scholars while

developing and analyzing websites using dissimilar published articles. Thus, in the present study comparative and analytical tools are used for analyzing the websites.

5.0 Scope and Limitation of the Study

The scope of the study is to explore the web-based information and services offered by selected university libraries through their respective websites. This study is restricted to the analysis of web-based information, services and content available on selected ten university library websites of West Bengal. Following the ten university libraries, which are listed below (Table 1)

Table 1: Profile of Universities

S.N.	Name of Universities and abbreviation	Established year	URL	Domain extension
1	Presidency University (PU)	1817	https://www.presiuniv.ac.in/web/	ac.in
2	University of Calcutta (CU)	1857	https://www.caluniv.ac.in/	ac.in
3	Jadavpur University (JU)	1955	http://www.jaduniv.edu.in/	edu.in
4	University of Kalyani (KU)	1960	https://www.klyuniv.ac.in/	ac.in
5	University of Burdwan (BU)	1960	https://www.buruniv.ac.in/	ac.in
6	University of North Bengal (NBU)	1962	https://www.nbu.ac.in/	ac.in
7	Rabindra Bharati University (RBU)	1962	http://www.rbu.ac.in/	ac.in
8	Vidyasagar University (VU)	1981	http://www.vidyasagar.ac.in/	ac.in
9	West Bengal State University (WBSU)	2008	https://wbsu.ac.in/	ac.in
10	Kazi Nazrul University (KNU)	2012	https://www.knu.ac.in/	ac.in

The above table collates the general view of all the ten (10) universities of West Bengal and it includes name of the university, abbreviations of the university name, year of establishment and the Uniform Resource Locator (URL). There are commonly two types of domain extensions are found. It shows *'ac.in'* is the most used domain by 9 universities (90%) and 1 (10%) university *'edu.in'* uses it as their website domain.

6.0 Findings and Analysis

Table 2: General information about the library

General information	PU	CU	JU	KU	BU	NBU	RBU	VU	WBSU	KNU	Total (10) %
Introduction	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10 (100)
Mission/Vision	Y	Y	N	Y	Y	N	N	N	N	Y	04 (40)
Library Hours	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	09 (90)
Library Rules	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	09 (90)
Membership	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	09 (90)
Library fees and other charges	Y	Y	N	N	Y	Y	Y	Y	N	Y	07 (70)
Library Services	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	09 (90)
Collections	N	N	N	Y	Y	Y	Y	Y	Y	Y	07 (70)
Infrastructure	Y	N	N	Y	Y	Y	N	Y	N	N	05 (50)
Library Teams	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	09 (90)
Library Sections	Y	Y	N	N	Y	Y	N	Y	N	Y	06 (60)

	N	N	N	Y	Y	Y	N	Y	Y	N	
Statistics	N	N	N	Y	Y	Y	N	Y	Y	N	05 (50)
Differently-abled section	N	N	N	N	Y	Y	N	N	N	N	02 (20)
Book Bank	N	N	N	N	N	N	N	Y	N	N	01 (10)
Reprography	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	9 (90)
Collection Development Policy	Y	N	N	N	N	N	N	Y	N	N	02 (20)
Reach Us	Y	N	N	N	Y	Y	Y	Y	Y	N	06 (60)
Notice	Y	Y	N	N	N	Y	N	Y	Y	N	05 (50)
Mobile app to browse	N	N	N	N	N	N	N	Y	N	Y	02 (20)
QR Code browse	N	N	N	N	N	Y	N	N	N	Y	02 (20)
Score (20)	14	11	06	11	15	16	09	17	08	12	
Percentage (%)	11.76	9.24	5.04	9.24	12.61	13.45	7.56	14.30	6.72	10.08	
Total Score					119 (100%)						

Y=Yes, N=No

In the table 2 depicts the general information with regard to library websites such as introduction (about library), mission/vision, library hour, rules, different fees collection, services, collection development policy, notice and facilities to their user community. The study reveals that all the selected libraries have given introduction (about library); about 9 (90%) libraries provided information about library hours, rules, membership information, services, library teams, library section and reprography services on their library websites; 7 (70%) libraries provides information regarding library collection and different charges of the library. Only two libraries 6 (60%) among the selected libraries provide information about library section and how to reaching their library. 5 (50%) libraries providing information regarding infrastructure, statistics and notice; only 4 (40%) libraries mentioned their mission and vision. However, some of the selected libraries provide information regarding differently-abled section, library collection development policy; 2 (20%) libraries provide mobile application and QR code access to browse the library website; Only Vidyasagar University facilities book bank services to their library users.

Table 3: Library resources and services

Library resources and services	Name of Universities										Total (10) %
	PU	CU	JU	KU	BU	NBU	RBU	VU	WBSU	KNU	
OPAC	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10 (100)
Web-OPAC	Y	Y	Y	N	Y	Y	Y	Y	N	Y	08 (80)
E-Books	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10 (100)
E-Journals	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10 (100)
Databases	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10 (100)
CAS/SDI	Y	Y	Y	Y	Y	N	N	Y	N	N	06 (60)
Useful Links	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10 (100)
User manual	N	Y	N	N	N	N	N	Y	N	Y	03 (30)
Old Question Paper	Y	Y	Y	N	Y	N	N	Y	N	N	05 (50)
Remote access	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10 (100)
Consortia	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10 (100)
Academic Publication	Y	Y	Y	N	Y	Y	Y	Y	N	Y	08 (80)
Single window search	Y	N	Y	N	N	N	N	N	N	N	02 (20)
User Orientation	N	Y	Y	N	Y	Y	N	Y	N	N	05 (50)

	PU	CU	JU	KU	BU	NBU	RBU	VU	WBSU	KNU	Total
ILL/document delivery	N	Y	Y	N	Y	N	N	Y	N	N	04 (40)
Newspaper clipping	N	N	N	N	N	N	N	N	N	N	00 (00)
New Arrival	N	Y	Y	N	Y	N	N	N	N	Y	04 (40)
Wi-Fi	N	N	N	N	Y	Y	N	Y	Y	Y	05 (50)
Reminder Services	N	N	N	N	Y	N	N	Y	N	Y	03 (30)
RSS feed	N	N	N	N	N	N	N	N	N	N	00 (00)
FAQ's	Y	N	Y	N	N	Y	N	Y	N	Y	05 (50)
Ask a Librarian	Y	N	Y	Y	N	Y	N	Y	N	Y	06 (60)
Score (22)	14	15	17	09	16	13	09	18	08	15	
Percentage (%)	10.45	11.19	12.69	6.72	11.94	9.70	6.72	13.43	5.97	11.19	
Total score					134 (100%)						

Table 3 depicts the details of selected library services and facilities provided through the library websites. The above table shows all the selected libraries under study are having library services related to OPAC, e-books, e-journal, database, useful links, remote access and consortia access facilities. This study also reveals that 8 (80%) libraries provide Web OPAC and academic publication archiving; Only 6 (60%) selected libraries provide CAS/SDI and ask-a-librarian facilities; 5 (50%) libraries provides old question paper, user orientation, Wi-Fi and FAQ's services. This table also reveals that 4 (40%) libraries provides inter library loan/document delivery and display of new arrival; user manual and reminder services 3 (30%); single window search 2 (20%); and none of the selected libraries provide newspaper clipping and RSS feed facilities.

Table 4: Features of library websites

| | Name of Universities | | | | | | | | | | Total (10) % |
Features	PU	CU	JU	KU	BU	NBU	RBU	VU	WBSU	KNU	
Last update	Y	N	N	N	N	Y	N	Y	N	N	3 (30)
Navigation	Y	Y	Y	N	Y	Y	N	Y	N	Y	7 (70)
Layout	Y	Y	Y	N	Y	Y	N	Y	N	Y	7 (70)
Registration/ Login	Y	Y	Y	N	N	Y	Y	Y	Y	Y	8 (80)
Keyword Search	Y	Y	Y	N	Y	Y	Y	Y	N	Y	8 (80)
Direct Link	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10 (100)
Download forms	Y	Y	Y	N	N	N	N	Y	N	N	4 (40)
Social networking	Y	N	N	N	Y	Y	N	Y	Y	Y	6 (60)
Feedback	Y	N	N	N	N	N	N	Y	Y	Y	4 (40)
Score (09)	09	06	06	01	05	07	03	09	04	07	
Percentage (%)	15.79	10.53	10.53	1.75	8.77	12.28	5.26	15.79	7.02	12.28	
Total score					57 (100 %)						

This table shows that various features of websites of university libraries. All the selected libraries have direct link features from the university homepage to the library website's homepage. Presidency University, University of North Bengal and Vidyasagar University library websites updated regularly. Navigation and layout has been found in 7 (70%) university library websites which is very important for a good website. Only 8 libraries (80%) among the selected libraries have the feature of keyword search features and registration or log in facilities. Only selected number of library websites provide some features related to social networking 6 (60%), download form 4 (40%) and feedback 4 (40%).

Table: 5 Ranking of University library websites

Specification	Name of Universities									
	PU	CU	JU	KU	BU	NBU	RBU	VU	WBSU	KNU
General Information (Max. Score 20)	14	11	06	11	15	16	09	17	08	12
Resources and Services (Max. Score 22)	14	15	17	9	16	13	09	18	08	15
Features (Max. Score 09)	09	06	06	01	05	07	03	09	04	07
Total (Max. Score 49)	37	32	29	21	36	36	21	44	20	34
Rank	2nd	5th	6th	7th	3rd	3rd	7th	1st	9th	4th

This table shows the ranking of university libraries of the West Bengal. This score position and rank is based on the above three tables. It was observed that Vidyasagar University library website scored maximum score i.e. forty four (44) out of forty nine (49) followed by Presidency University scored 37, Burdwan University and University of North Bengal library website scored 3rd position with 36 out of forty nine, Kazi Nazul University scored 4th position followed by University of Calcutta (32), Jadavpur University (29), Rabindra Bharati University (21), Kalyani University (21) and West Bengal State University (20).

7.0 Findings

a) It was found that all the selected libraries under study have provided information about library (introduction) and reprography services.

b) Almost all libraries except West Bengal State University providing information regarding library hours, rules, membership and library team information at their library websites.

c) Only 7 (70%) libraries provide information regarding library collection and library fees.

d) The study reveals that Vidyasagar University (14.29%) and University of North Bengal (13.45%) had providing maximum general information.

e) Out of 10 libraries only 6(60%) libraries provide information about Library Sections and how to reach the university libraries.

f) Only Vidyasagar University had book bank facilities to their users.

g) University of Burdwan and University of North Bengal has facilitated to differently abled library sections.

h) The study found that two libraries have collection development policy to build a good library collection.

i) University of North Bengal and Kazi Nazrul University libraries have QR code features to access the library resources.

j) Only 2 libraries have developed a mobile application to search and access the library resources.

k) It was observed that 5 (50%) libraries upload the old question papers and 8 (80%) libraries upload academic publication in a database or digital repositories.

l) All the libraries connected with library consortia and offer to Remote Access to their user community.

m) All university library website has a useful link attached for the convenience of the readers.

n) It was found that none of the libraries provide newspaper clippings and RSS feed facility.

o) FAQ and Ask-a-Librarian is an important issue for every library. Out of ten libraries only five libraries provide FAQs services while six libraries have ask-a-librarian facilities.

p) It was observed that a very few libraries 30% update their websites periodically, 40% libraries provides different form download facilities and online feedback facility.

8.0 Suggestions

a) Library Page must be designed and organized with important information regarding library and the services.

b) University libraries should be familiar with the value and potential benefits of using WWW as a tool for offering better information to user community.

c) A well designed webpage with great navigation features, moveable banners/picture scan attract the users.

d) Library web-pages have to provide all the contact details of the employees and the authority for maintenance.

e) Efficient searching facility and index/ sitemap links must be provided on the home page. Home link and all major links should be provided on each internal page.

f) Library services can be extended through social networking sites like Facebook, blog, Twitter, and Printerest etc.

g) Every university websites must have a separate portal for its library and steadily hyperlinked with other useful links.

h) Library websites can be linked with open educational resource (e-PG Pathshala, National Digital Library (NDL), DOAJ, and e-Gyankosh etc) and MOOCs links (SWAYAM, edX, Coursera, Udacity etc).

i) The download time must not be too lengthy and presentation must be well organized.

j) Easy navigation to each internal page, library homepage, and major hyperlinks etc.

k) Index/ sitemap and search facility adds to the weight.

l) Evaluative principles must be set for the university websites and library web-pages.

m) In addition of content of the library webpage should be covered by library rules-regulations, timings, library staff details, services, collections, FAQ, Ask-a-Librarian, Web-OPAC, and important database.

n) It is recommended to provide more mobile-based library and information services to the users.

o) More innovative technologies such as Mobile-based technologies, cloud based services, Web 3.0 and others should be included as per need.

9.0 Conclusion

The internet and web technology is an important aspect of our daily life; we can't think that information spreading without the use of it. Library websites are the cardinal point to provide high-quality library services and information resources which will be accessible effectively. The present study affirms that most of the university libraries have library website and partially they provide web-based library services through website. The university library websites need to redesign and reshape to interact with their users and provide

more document and library information services. Through web technology users can access 24x7 library information services at university campus, at home, at anywhere. The web-based library facilities are bliss as they can access information from any such place by their mobiles, laptops, desktops etc.

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