

**WEB CONTENT DEVELOPMENT OF COLLEGE LIBRARIES
AFFILIATED TO UNIVERSITY OF MUMBAI**

**MINOR RESEARCH PROJECT
(2019-20)
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DECLARATION

This is to declare that the Minor Research Project entitled “Web Content Development of College Libraries affiliated University of Mumbai ” sponsored by University of Mumbai (2019-20) submitted is the original work and have not been submitted elsewhere.

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INTRODUCTION

The digital library is in an area of significant growth and change. Better and cheaper Internet accessible devices, improved global network speeds, changing customer expectations and social media are all a part of the change we experience in the way people consume, produce and share information. Only a few years ago we could assume that a user would access a digital library through a web browser on a standard desktop display, but with the rapidly increasing number of Internet accessible devices, like smartphones and tablets, this is changing dramatically. The library users expect to access information anywhere and anytime, and they want to find content quickly and easily whatever device they are using. A user might search for an article in a digital library on a smartphone while eating breakfast, read the article on a tablet on the way to work and maybe recommend the article to a colleague while sitting at a laptop in the office. All these tasks from the same website, but by using different devices.

This raises the issues of how the content of digital libraries should be presented on different screens and how the devices should work together to create a holistic unified experience for the users at every step of their online journey. Responsive web design is one approach that tries to address these challenges, by developing one single website that responds to users behavior and environment based on screen size, platform and orientation. The aim is to provide easier reading and navigation and create a more consistent user experience regardless of the users choice of device [22]. Some designers and developers state responsive web design is the way to go for future web development, while others thinks there are still issues with the approach before it can be a final answer to the ever-changing mobile world. Several digital libraries have already launched a responsive website and some stands at a crossroad where they must choose which strategy that will be most appropriate for their users.

Even though there has been done a great number of usability studies of digital libraries and some research on making digital libraries available on mobile phones, there is a lack of research on how digital libraries should deliver their content to all devices in today's web environment. Responsive web design is major trend, but can this approach be an appropriate solution for digital libraries, and can a responsive website alone fulfill all the digital library users' needs on all devices?

In the digital and information communication technology the application of web technologies give a challenge before the library and information professionals for storing and dissemination of information in the library services. No doubt present situation libraries are shifting from collection to access. With the increasing online applications the users are more aware about web technology and demanding libraries to be able to meet all their information needs. Before the concept of digital libraries the librarians are treated as resource supply people to share the knowledge to the needy users. Now the library and information professionals have developed their digital library system. It is necessary to develop computer programming knowledge among the library professionals. The UGC provides financial assistance to the web-based library services in the tenth five year plan to develop e-contents in higher education subjects. Its not only provide financial assistance but also technical support to teachers and other experts based in universities and its affiliated colleges.

Content is the precious and useful to anyone but right content in right form is the most effective to the right users. In digital environment most of the information seekers gradually more depend upon the web for digital contents but have no hint how to retrieve intended information, which led to the demand for content organization and content development. Content management system was first declared in the late 1990s. Now there are various content management systems are available and each of these has its own features, for this reason it's needed a comparative analysis of durable open source systems in order to select the most accurate assigned goals¹. A website is a speculum of any organization and it is a real way of manifesting what an organization trust by reflecting the organization's mission and vision to its user community. For managing website, most of the libraries in the worldwide and their parent institutions are progressively using Web Content Management Systems (WCMSs).

A content management system (CMS) as a dynamic one helps any beginner personnel to create, modify, update and publish the content of webpage without having much of technical knowledge. Today's in the digital world it is one of the most creative and challenging work of library and information professionals for developing library website and making it up-to-date regularly. Moreover, a good IT skilled and professionalism personnel is required for maintaining web design along with performing their daily activities.

Academic library websites contain a vast amount of complex content and, all too often, there is a lack of established process for creating, updating, and deleting that content. There is no clear vision or purpose to the content, and numerous staff members are expected to maintain content with little guidance. Because of this, many library websites end up with content that is poorly written, duplicative, or outdated.

NEED

Though various web content management systems are available in this digital era, but mainly drupal, wordpress and joomla have set up themselves as the leaders for online CMS. Moreover, creating a website by using web CMS is very easy and does not need enough technical skills for managing it. Choosing which system to use in an information institution can be difficult for information professionals but it is an important choice to make. In Bangladesh, most of the University libraries used WCMSs for managing their web content. An attempt has been made to present the current situation of using WCMSs in college libraries affiliated to University of Mumbai and also presents the benefits of using WCMS. Moreover, this research will represent the problems of using WCMSs by the College.

OBJECTIVES

1. To study the Web Content Development of College Libraries affiliated to University of Mumbai
2. To find out the Content Development of College Libraries affiliated to University of Mumbai
3. To find out the difficulties of Content Management of College Libraries affiliated to University of Mumbai
4. To assess the software used for Web Content Development of College Libraries affiliated to University of Mumbai

Rationale for taking up the proposed project and its interdisciplinary relevance

The reason behind undertaking the present study of Web Content Development in academic college libraries affiliated to University of Mumbai is to know the status of use and implementation of web content development and management and the find out the problems faced by the college libraries. electronic resource management system for the users and researchers in the digital era.

This research project will be useful for all the discipline of social sciences as a whole and for library and information science as a part and humanities. This research project has profound relevance for interdisciplinary teaching and learning. Its outcome will bring paradigm shift in the college libraries for managing the web content development.

REVIEW OF RESEARCH AND DEVELOPMENT IN THE FIELD

A literature search on Web development in academic libraries yielded a variety of useful titles. However, for the purposes of this discussion, we concentrated on literature that alluded to the primary development and management of the Web site and the role of the developers. We did not include many works that addressed usability, for example, since this is such a distinct area of study.

There were a number of questions posed and answered in the literature related to our research. These fell into several categories: (1) who are the Web developers, and what do they do?; (2) how are Web groups selected, and what is their role in the Web process?; and (3) how do libraries engage users in Web development?

A key article by Ruth Sara Connell (2008) incorporated all these elements and most closely pertained to the content of this article. She reported on a survey of Web developers in academic libraries that explored the demographics and duties of people responsible for Web development; outsourcing; the characteristics, size, abilities, and selection of Web teams; resources and technology used for development; accessibility; and usability testing. Connell said nearly half the institutions surveyed indicated they had one Web designer, and the majority of them held other duties in conjunction with the Web.

Two surveys by Mary K. Taylor (2000) and Jason Kneip (2007) further examined particulars about library Webmasters. They both investigated educational background, Web training, job titles and duties, and workload. Although these studies were close to a decade apart, both researchers found about three-quarters of Webmasters held MLIS degrees; more than 80 percent considered themselves self-taught (in addition to other formal training); and roughly 60 percent in both studies reported having responsibilities in addition to the Web site, supporting Connell's findings. One area of difference that emerged was the Webmasters' perceptions of their library school training in Web development — in 2000, 71 percent of the Webmasters considered their library school preparation “inadequate,” while in 2007, only about 55 percent shared this opinion. Taylor also found more than 80 percent of Webmasters were either “satisfied” or “very satisfied” with their positions.

The majority of the pertinent articles related to the selection, function, and dynamics of the Web team. Jennifer Church and Kyle Felker (2005), Jessica Burdman (1999), and Jerilyn R. Veldof and Shane Nackerud (2001) outlined recommended roles and skills for members of Web teams. Burdman emphasized several elements necessary for collaborative Web development, including planning, assembling the Web team, communicating effectively, managing change, and administering a large-scale content site. Additional considerations for group work suggested by Church and Felker were a clear-cut definition of the Web team's authority, accountability, and adequate technical training — as the authors said, “A Web team without sufficient knowledge is a huge white elephant”. Veldof and Nackerud referred to several academic library projects to illustrate the variety of knowledge and skills and the level of diversity needed to create a successful Web site, including project management, graphic design, information architecture, and accessibility for users with disabilities.

Debra Engel and Sarah Robbins (2003) focused on the benefits of collaboration that improved the University of Oklahoma Libraries' Web site. Of interest is that both library faculty and staff members representing major areas of the library worked together on a large Web committee. The following elements led to the group's success: establishing objectives with deadlines and ground rules for group interaction (e.g., zero tolerance for attacks on individuals) and using small work groups to accomplish a variety of tasks. In a timely new book published by the Association of

College and Research Libraries, Brenda Reeb (2008) delved into the unique roles, skills, and responsibilities of those involved in library Web site design, the interaction among the participants, and the steps involved in the design process. One of her most salient points was the need for librarians to be more accepting of colleagues without an MLIS degree when collaborating on Web site development.

The third main area in the literature focused on how libraries engage their users in Web development. Gary Roberts (2005) enumerated the benefits of involving patrons, most especially students, throughout the Web design process. Not only were they involved in usability testing, but there were also students on the redesign committee, and students drew up an initial design and created and edited page prototypes. Speaking from a corporate standpoint, Jamie Manning (2002) was zealous about shifting the Web team members' focus to becoming ambassadors for the customers they served. This involved forging new relationships to ascertain user needs through individual consultations. Subsequent analysis of the interactions yielded usage patterns that could be used to interconnect pieces of the Web site to improve its functionality.

Relating to Web design with an eye toward user engagement in a Web 2.0 environment, Shu Liu (2008) surveyed Association of Research Libraries members about their Web sites' content, design patterns, and innovations. Some noteworthy features libraries reported using to involve their patrons were Really Simple Syndication (RSS) feeds for library news and events, customizable library spaces, live chat, podcasts, wikis, tagging, a "rate this page" function, a question of the week, and virtual tours. Karen A. Coombs (2007) reported on how one university library allowed its staff members to take greater ownership of the Web site and make it more appealing to users. She created numerous Web 2.0 pillars that were used to rebuild the library's Web site. These included radical decentralization of Web content; using a combination of different technologies to allow content reuse and to create a uniform appearance across the Web site; "perpetual beta" to foster continual improvements; the ability to remix or repurpose different types of content both onto and from the library's Web site; and last but not least, establishing a rich experience for the user as a contributor.

Relevance to social benefit by this R&D in the proposed area

In the recent years Web Content Development have regarded as a famous option for producing, organizing and managing web content for any information institutions. In this age software developers have created various library management software packages for library and information institutions and simultaneously it is also very difficult task to choose appropriate content management software for a library.

Web Content management is relatively a new concept in Library and Information Centres. Now every organization tries to maintain websites either for intranet or Internet. Resources in any organization regarded as a Kaiser, where library or any other organization is his Palace and librarian or information manager is a ruler to control and administrate the content management.

RESEARCH METHODOLOGY

The descriptive survey methodology has been used for the present study. The questionnaire as a tool for data collection was used. Questionnaire was designed to collect the data. Google form of questionnaire was created and it was shared among various librarian groups affiliated to University of Mumbai. The questionnaire was also mailed on ILOSC group to acquire the data. The scope for the present study was the academic librarian affiliated colleges at University of Mumbai. Further the data collected was analyzed and findings were drawn.

DATA ANALYSIS & INTERPRETATION

On the data received from the college librarians affiliated to University of Mumbai, its interpretation has been done accordingly. Total responses for the questionnaire received were 33 colleges, out of which 5 responses were found faulty, hence those responses were deleted.

Table 1: Name of the College and its establishment

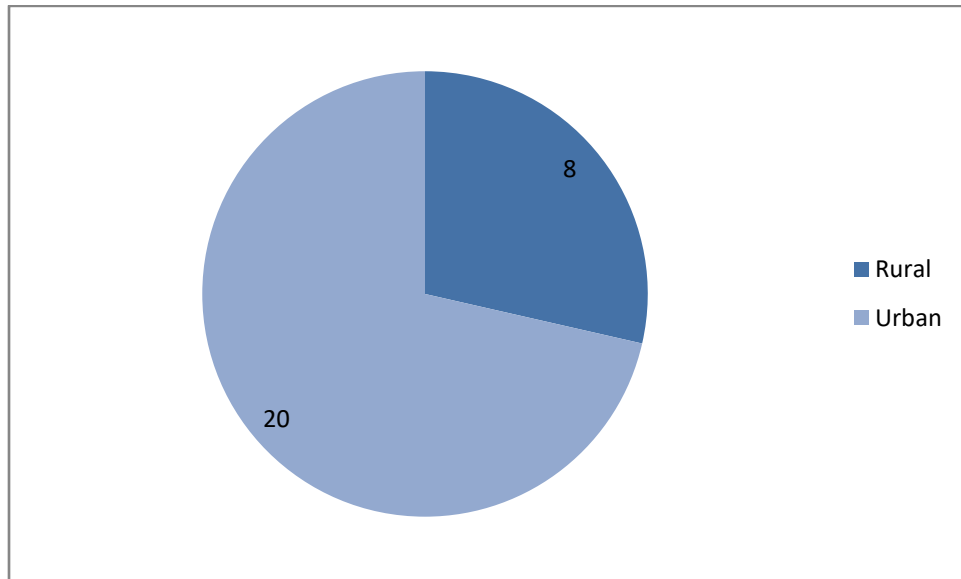
Sr. No.	Name of the College	Year of Establishment
1	Navnirman Shikshan Sanstha's Laxmibai Sitaram Halbe College of Arts, Commerce and Science, Dodamarg, Dist. Sindhudurg	2001
2	J. W. Sadhubella Girls College, Ulhasnagar, Thane.	1996
3	Maharshi Dayanand College, SSRao road, Parel, Mumbai	1962
4	Advocate Balasaheb Apte College of Law Dadar	2012
5	Lala Lajpatrai College of Commerce & Economics, Mahalaxmi, Mumbai	1972
6	Sardar Patel College of Engineering, Andheri, Mumbai.	1962
7	Chetana's H S College of com and eco Bandra , Mumbai.	1970
8	Pragati College of Arts and Commerce, Pragati College Road, Dattanagar, Dombivli, Kalyan.	1997
9	College of Home Science Nirmala Niketan, Churchgate, Mumbai.	1944
10	Thakur School of Architecture and Planning, B - Block, Thakurli Educational Campus, S. Thakur Marg, Thakur Vilbage, Kandival, Mumbai.	2014
11	Sonubhau Baswant College of Arts and Commerce, Shahapur, Kalayan.	1984
12	Vasantrao Naik College Murud-Janjira, Raigad.	1992
13	Vartak College,, Vasai, Palghar.	1971
14	AIKC College of Education, Byculla, Mumbai.	1989
15	KPB Hinduja College of Commerce, Churniroad, Mumbai.	1972
16	Bhavan's College Andheri, Mumbai	1946
17	Theem College of Engineering Boisar near union park Boisar, Palghar	2009
18	Bombay Teachers Training College, Colaba, Mumbai.	1969

19	V. K. Krishna Menon College of Commerce and Economics and Sharad Shankar Dighe College of Science, Bhandup, Mumbai.	1982
20	Dr. Patangrao Kadam Arts and Commerce College Pen,Raigad.	1984
21	Konkan Gyanpeeth Karjat College of Arts Science and Commerce Karjat Raigad	1989
22	Gokhale Education Society's Arts, Commerce and Science Shreewardhan	1998
23	Shah & Anchor Kutchhi Engineering College, Chembur, Mumbai.	1983
24	Mulund College of. Commerce S N Road Mulund, Mumbai.	1970
25	Datta Meghe College of Engineering, Airoli, Navi Mumbai.	1988
26	KES Anandibai Pradhan Science College, Nagothane.	1992
27	Bharat College of Arts and Commerce, Badlapur	1991
28	Seva Sadan College of Education, Ulhasnagar, Thane.	1966

It reveals from the table no. 1 that the responses received for the study has found that college are from Law, Engineering, Education and Arts, Science & Commerce affiliated to University of Mumbai. The establishment of the college was found in the year 1962 to 2014 respectively.

Table 2: Location of the College

Sr. No.	Location	Response
1	Rural	8
2	Urban	20
Total		28

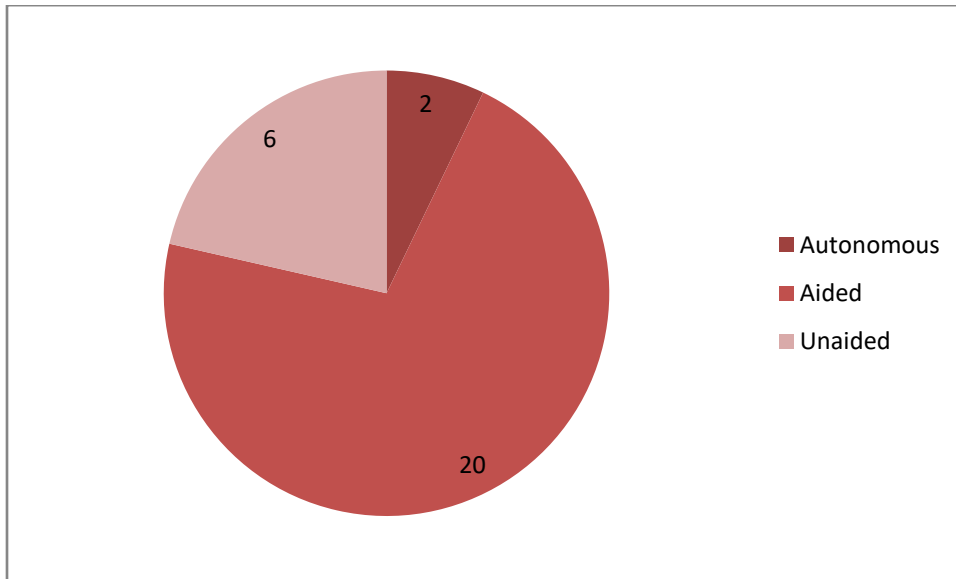


Graph 1 : Location of the College

It reveals from table 2 and graph 1 that the responses received for the location of colleges were Rural 8 and Urban 20. It shows that the colleges falls in urban region are to be more techno savvy as compare to the rural college, it might be the less connectivity of internet or infrastructure to the colleges which are located in the rural area because of which they were unable to respond to the questionnaire.

Table 3: Status of College

Sr. No.	Status	Responses
1	Autonomous	2
2	Aided	6
3	Unaided	20
Total		28

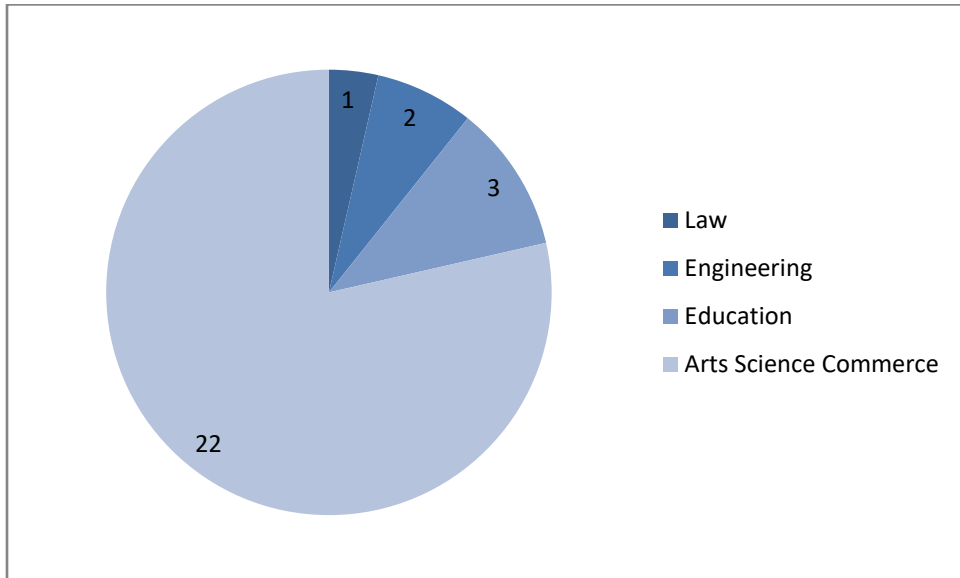


Graph 2 : Status of College

It reveals from the table 3 and graph 2 that the responses received for the status of the colleges were Autonomous 2, Aided 6 and Unaided 20. It shows that the unaided college showed the positive interest to respond to the questionnaire and might be working on the Web content development of the libraries effectively.

Table 4: Academics of College

Sr. No.	Academics	Response
1	Law	1
2	Engineering	2
3	Education	3
4	Arts Science Commerce	22
Total		28

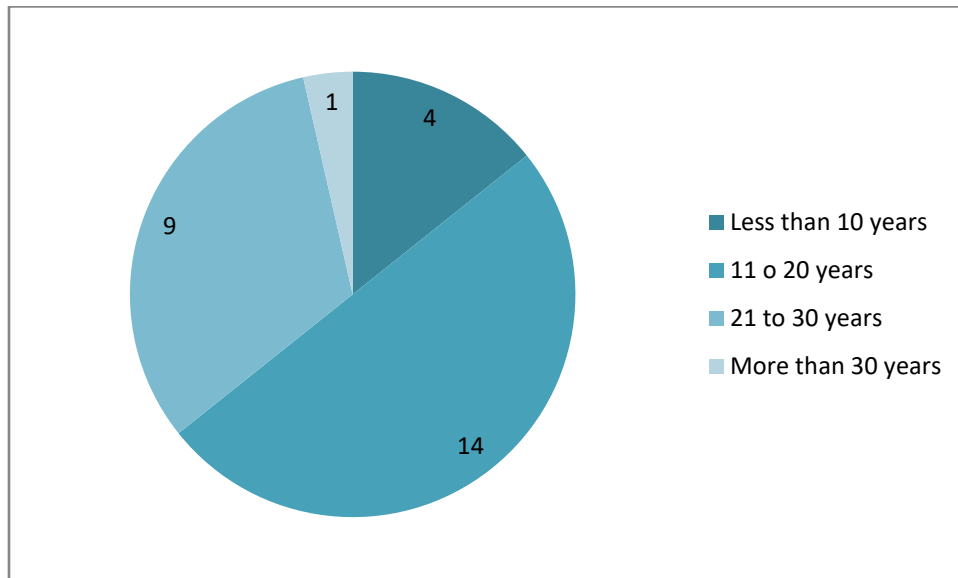


Graph 3 : Academics of College

It reveals from table no. 4 and graph no. 3 that the responses received for the academics of the college were Law 1, Engineering 2, Education 3 and Arts, Science & Commerce 22 respectively. It shows that the number of colleges affiliated to the University of Mumbai are in more as compare to the other academics or faculty of the colleges.

Table 5: Experience of Librarian

Sr. No.	Experience	Response
1	Less than 10 years	4
2	11 to 20 years	14
3	21 to 30 years	9
4	More than 30 years	1
Total		28

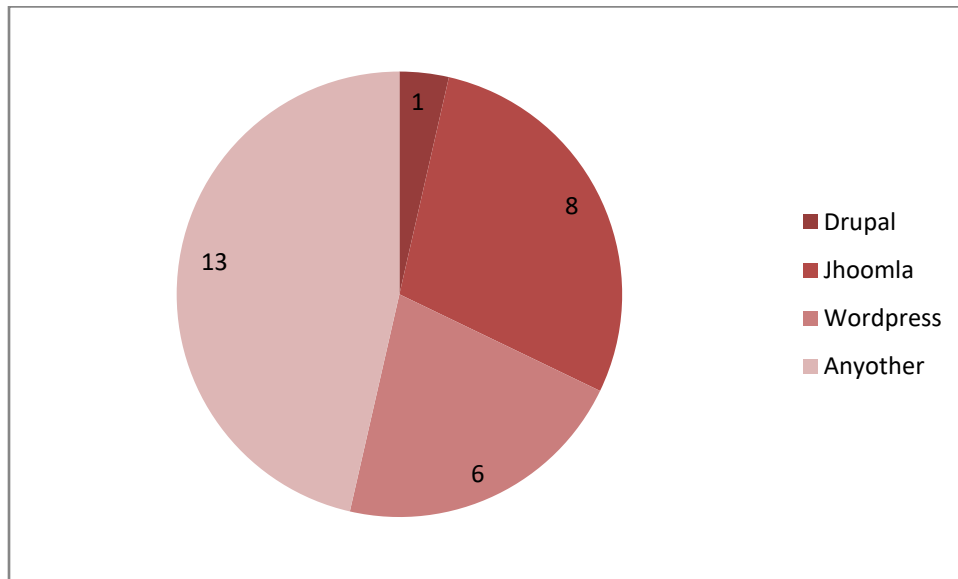


Graph 4 : Experience of Librarian

It reveals from the table 5 and graph 4 that the responses received for the experience of the librarian were Less than 10 years was 4, experience of 11 to 20 years was 14, experience of 21 to 30 years was 9 and experience of the librarian more than 30 years was 1 respectively. It shows that the experience of the librarian are found more in the 11 to 20 years, which shows that the librarians can adopt the new upcoming technology to be used in the libraries to grow the library as well as the particular college also.

Table 6: Use of Web Content Management Software

Sr. No.	Software	Response
1	Drupal	1
2	Joomla	8
3	Wordpress	6
4	Any other	13
Total		28

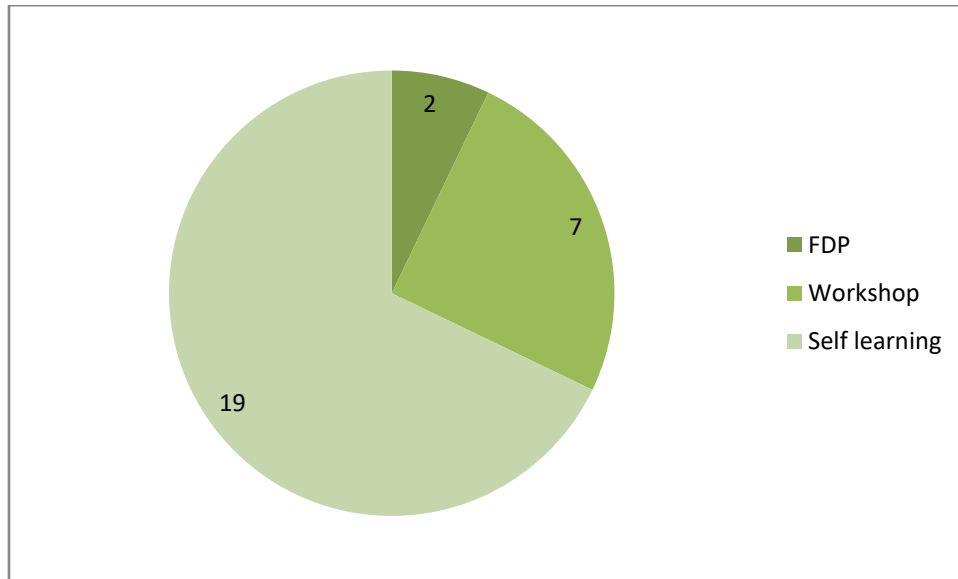


Graph 5 : Use of Web Content Management Software

It reveals from the table 6 and graph 5 that the responses received for the use of web content management software by the libraries were Drupal 1, Joomla 8, Wordpress 6 and Any other 13 respectively. It shows that the software used for Web Content Development by the libraries are mostly liked the other software.

Table 7: Learning of Software

Sr. No.	Software	Response
1	FDP	2
2	Workshop	7
3	Self learning	19
Total		28

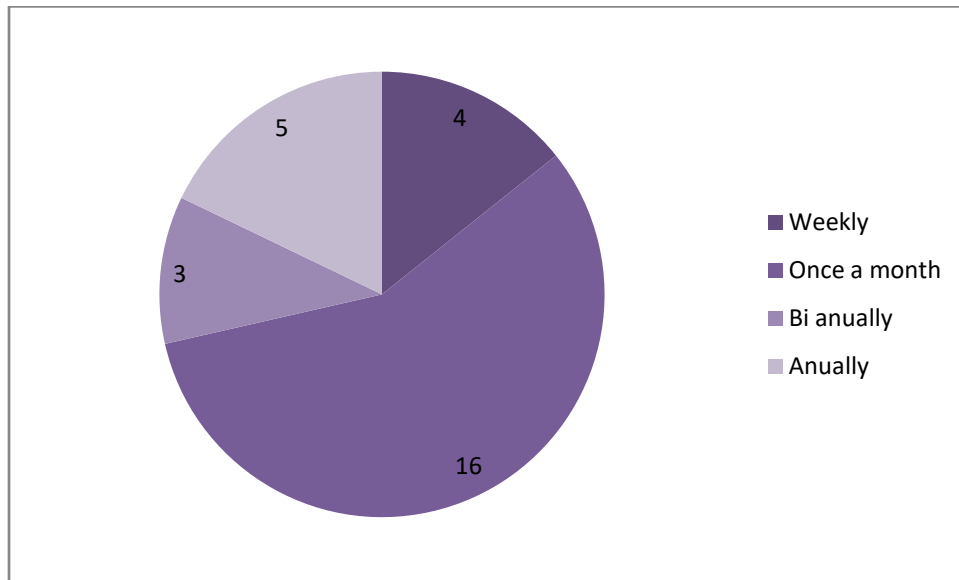


Graph 6 : Learning of Software

It reveals from the table 7 and graph 6 that the responses received for learning of software were FDP 7, Workshop 7 and Self learning 19 respectively. It shows that the librarians are self motivated and adopt the new technology to upgrade the library system.

Table 8: Frequency of uploading the Content

Sr. No.	Frequency	Response
1	Weekly	4
2	Once a month	16
3	Bi annually	3
4	Annually	5
Total		28

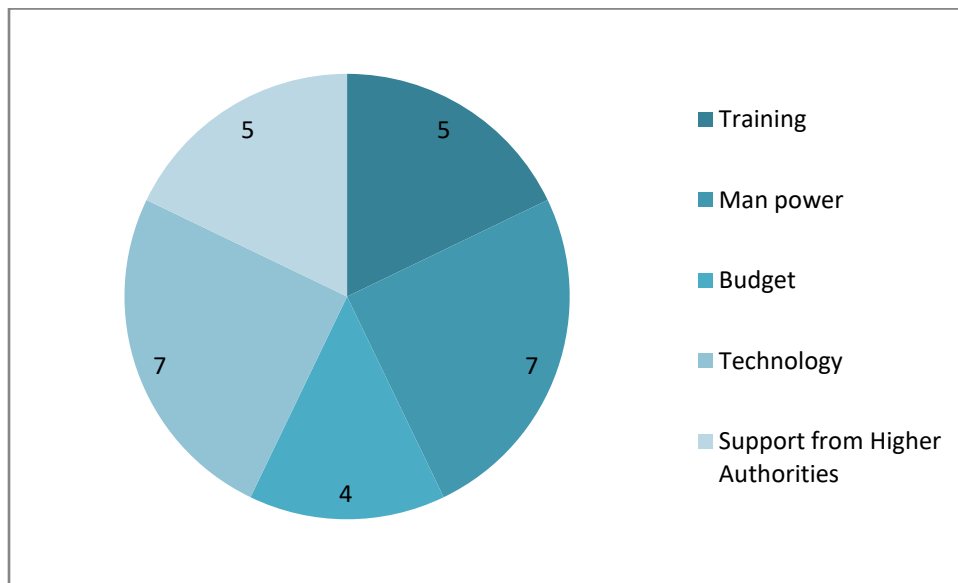


Graph 7 : Frequency of uploading the Content

It reveals from the table 8 and graph 7 that the responses received for frequency of uploading the content by the librarian were Weekly 4, Once a month 16, Bi annually 3 and Annually 5 respectively. It shows that the content librarians prefer to upload the content once in a month.

Table 9: Difficulties faced for Web Content Development

Sr. No.	Frequency	Response
1	Training	5
2	Man power	7
3	Budget	4
4	Technology	7
5	Support from Higher Authorities	5
Total		28



Graph 8 : Difficulties faced for Web Content Development

It reveals from the table 9 and graph 8 that the responses received for difficulties faced for web content development were Training 5, Manpower 7, Budget 4, Technology 7, Support from Higher authorities 5 respectively. It shows that difficulties faced by the librarian for web content development is mostly the manpower and the technology.

FINDINGS

- i. It is found that the colleges falls in urban region are to be more techno savvy as compare to the rural college, it might be the less connectivity of internet or infrastructure to the colleges which are located in the rural area because of which they were unable to respond to the questionnaire.
- ii. It is found that the unaided college showed the positive interest to respond to the questionnaire and might be working on the Web content development of the libraries effectively.
- iii. It is found that the number of colleges affiliated to the University of Mumbai are in more as compare to the other academics or faculty of the colleges.
- iv. It is found that the librarians can adopt the new upcoming technology to be used in the libraries to grow the library as well as the particular college also.
- v. It is found that the software used for Web Content Development by the libraries are mostly liked the other software.
- vi. It is found that the librarians are self motivated and adopt the new technology to upgrade the library system.
- vii. It is found that the content librarians prefer to upload the content once in a month.
- viii. It is found that difficulties faced by the librarian for web content development is mostly the manpower and the technology.

CONCLUSION

In the digital era, library users are becoming more technology savvy due to the availability of the Internet and other smart devices. They need the right information from the right source with a very short span of time as they are very much busy. It brings up two important issues for the LIS Professionals: Information seeking behavior of different types of users for library resources and the importance of user awareness towards the library resources. Timeliness and accuracy are also important for the user's point of view. One of the important tools in achieving these things is to create the library website so that users can at least understand, what are the resources and services provided by the library, and users directly find the desired information without wasting time for searching the information at the different platform.

The Library website plays an important and powerful role in increasing awareness among the users about the services and activities of libraries and information resources centers. The most creative and challenging work is to develop a library website and making it up-to-date regularly; it requires sound knowledge and professionalism of library personnel on web designing along with performing their daily library activities. The vision, mission, and values of any library could become successful if it satisfies the user's need at the optimum level. To be updated in the present-day context, libraries need to go beyond their physical boundaries and working hours, need to potentially expand library services and facilities to users located remotely so that they can access the information from anywhere, anytime.

The libraries' websites as a means to provide access to information e-resources, online catalogs, news, events, and creative workshop, besides providing information about library collection, services, and facilities. However, only having a website will not attract much of their users; they need to create such websites that are user friendly where users can easily retrieve the desired information. In most of the Institutions, the library website was maintained by a third-party or the competent authority of the computer center. The website may be the library's domain or placed within the institution/community website, but as there is a constant need for regularly updating the website and also the size of the content is increasing day by day. With such changes, the structure and nature of the library and side by side of the LIS profession have also changed dynamically.

Now in the present situation, the LIS professionals are playing all around multimodal roles to satisfy the different requirements of the end-users. A website is an effective tool for any organization to disseminate its mission and vision to its user or the world. Earlier, we used to build up a static website that was difficult to update, modify, or make any changes. All these difficulties show the way to capitalize dynamic website. A Content Management System (CMS) helps any novice to make, modify, publish and update the content of the webpage without having much technical expertise. Present-day, Library, and Information Science Professionals have many options to take advantage of using various open-source CMS. WordPress is one of them, for developing their website. Most of the world communities are using CMS to manage the content of their website

The concept of librarianship in HEIs had been changing day by day. Many peoples believe that the role of librarians is decreasing day, but the fact it is becoming more important provided you are keeping the same pace with the emerging trends and technologies in this field. There is a transformation in the need of library users and due to ICT; there is a change in the resources, services, and products of libraries. The library services and its facilities had crossed the boundaries of the four walls like the virtual library. In today's scenario of digitalization, the librarian should try to extend the facilities to the users apart from his location at any time. Marketing of the library services and products is perhaps the most important for increasing the usage to justify the ROI (Return on Investment).

The librarian will have to be more proactive in this area. He must understand the information-seeking behavior of the users. For optimum use of resources, the librarian must develop a mechanism for their user so that it provides the desired information directly to them rather wait for them to visit to the library. Libraries should provide web-based services and facilities to their users and it is the role of the librarians to act as an Information scientist and disseminate the information successfully. It's the right time to "think globally and act locally" and to be architect NOT the victim of the Change due to the impact of ICT on Library Services, Resources and Products. Previously Librarian or LIS Professional has to depend upon IT peoples to make a Library Website or to make and manage the table of the content of the Library on the web. With the emergence of the Open Source Content Management Systems, Library professionals need not to depend on IT professionals. By using open-source CMS, Library professionals independently create, manage command, maintain and upload the contents and also take back up their own content easily and effectively in any database format with free of cost.

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