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Indian Journal of Cancer Education and Research	2	9500	9000	742	703
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Indian Journal of Diabetes and Endocrinology	2	8500	8000	664	625
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Indian Journal of Forensic Medicine and Pathology	4	16500	16000	1289	1250
Indian Journal of Forensic Odontology	2	6000	5500	469	430
Indian Journal of Genetics and Molecular Research	2	7500	7000	586	547
Indian Journal of Law and Human Behavior	3	6500	6000	508	469
Indian Journal of Legal Medicine	2	9000	8500	703	664
Indian Journal of Library and Information Science	3	10000	9500	781	742
Indian Journal of Maternal-Fetal & Neonatal Medicine	2	10000	9500	781	742
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International Journal of Neurology and Neurosurgery	4	11000	10500	859	820
International Journal of Pediatric Nursing	3	6000	5500	469	430
International Journal of Political Science	2	6500	6000	508	469
International Journal of Practical Nursing	3	6000	5500	469	430
International Physiology	3	8000	7500	625	586
Journal of Animal Feed Science and Technology	2	8300	7800	648	609
Journal of Cardiovascular Medicine and Surgery	4	10500	10000	820	781
Journal of Emergency and Trauma Nursing	2	6000	5500	469	430
Journal of Forensic Chemistry and Toxicology	2	10000	9500	781	742
Journal of Global Medical Education and Research	2	6400	5900	500	461
Journal of Global Public Health	2	12500	12000	977	938
Journal of Microbiology and Related Research	2	9000	8500	703	664
Journal of Nurse Midwifery and Maternal Health	3	6000	5500	469	430
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Ophthalmology and Allied Sciences	3	6500	6000	508	469
Pediatric Education and Research	4	8000	7500	625	586
Physiotherapy and Occupational Therapy Journal	4	9500	9000	742	703
RFP Indian Journal of Medical Psychiatry	2	8500	8000	664	625
RFP Journal of Biochemistry and Biophysics	2	7500	7000	586	547
RFP Journal of Dermatology (Formerly Dermatology International)	2	6000	5500	469	430
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Content Analysis of Central Government University and State Government University Library Websites in Madhya Pradesh State, India

Kundan Jha

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Abstract

In this study is to evaluate and analyse the current status of the university library websites of central government university and state government universities in madhyapradesh state. Nwadays the library websites are performing a most important role in accumulating and circulating the information or the data sources to the users (i.e. students, faculty member, staffs and others) and it is a most popular way to interact with users without physical appearance. In the present study, contents of two central government university and twenty-three state government university library websites in madhyapradesh state have been analysed. In this study concluded that university library websites are playing an important role in higher education, research work, and educational development activities by effective dissemination of information resources and services.

Keywords: Content Analysis; Central Government University; State Universities; Library Websites; Web Contents; Web TechNlogy.

INTRODUCTION

The university library websites is one of the best effective dissemination of information and

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information publishing tools mainly functions as an teaching/academic services, various publish information i.e. - library at a glance, library mission, library objectives, library timings, library regulations and rules, vision, university holidays, library staff details, frequently ask questions, contact information of authority, collection, services, online public access catalogue, photo and video gallery, copyright information details, and any other best practices adopted etc. A library websites helps to build a long and strong relationship with the library and its users.

Today, most of the university libraries either have their own website or links in the homepage. With the help of Information and Communication TechNlogy (ICT), most of the university libraries provide quality e-Content to the potential users. The libraries are spending a sizable amount in procuring electronic resources such as e-Books, e-Journals, e-Databases, e-Theses and Dissertations and so on. University libraries should ensure the facility and services are reaching the end users through this platform. It is possible to send and receive information instantly to the users through a electronic or web medium. It is easy, convenient and timely to reach users. Due to the changes in technlogies, library websites needs periodic evaluation to improve its quality and ensure user friendliness. Assessment of library websites is inevitable in the current scenario and there is N exception from it (Still, 2001). Since libraries are becoming more accountable and have to prove that they are meeting performance metrics for funding

and accreditation, a website is a way to display data (Clunie and Parrish, 2018).

CENTRAL GOVERNMENT UNIVERSITY AND STATE GOVERNMENT UNIVESITIES IN MADHYA PRADESH STATE

Central Government University are established by an act of the Indian Parliament and State government universities in Madhya Pradesh state are established by an act of the Madhya Pradesh vidhansabha (legislative assembly) and approved by university grants commission (GoI). As on dated 17/12/2021, there are 02 central government university and 23 state government universities in Madhya Pradesh state.

List of Central And State University Considered for the Study

Name of Universities	Year of Establishment	URL of University Web Page/Site.
Dr. Harisingh Gour Vishwavidyalaya, Sagar (M.P.)	2009	http://www.dhsgsu.ac.in/
The Indira Gandhi National Tribal University, Amarkantak (M.P.)	2008	http://www.igntu.ac.in/
Atal Bihari Vajpayee Hindi Vishwavidyalaya (ABVHV), Bhopal (M.P.)	2011	http://www.abvhv.edu.in/
Awadesh Pratap Singh University (APSU), Rewa (M.P.)	1968	http://www.apsurewa.ac.in/
Barkatullaah University (BU), Bhopal (M.P.)	1970	http://www.bubhopal.ac.in/
Chhindwara University (CUC), Chhindwara (M.P.)	2019	https://cuc.mponline.gov.in/
Devi AhilyaVishwavidyalaya (DAU), Indore (M.P.)	1964	https://www.dauniv.ac.in/
Dharmashastra National Law University (DNLU), Jabalpur (M.P.)	2018	http://www.mpdnlu.ac.in/
Dr. B. R. Ambedkar University of Social Sciences (BRAUSS), Indore (M.P.)	2016	https://brauss.in/
Jawaharlal Nehru KrishiVishwavidyalaya (JNKV), Jabalpur (M.P.)	1964	http://jnkvv.org/
Jiwaji University (Jiwaji), Gwalior (M.P.)	1964	http://www.jiwaji.edu/
M. P. Bhoj (open) University (MPBOU), Bhopal (M.P.)	1991	https://mpbou.edu.in/
Madhya Pradesh PashuChikitsaVigyanVishwavidyalaya (NDVSU), Jabalpur (M.P.)	2009	https://www.ndvsu.org/
Maharaja Chhatrasal Bundelkhand Vishwavidyalaya (MCBV), Chhatarpur (M.P.)	1973	https://www.mchhatrasaluniversity. com/
Maharshi Panini Sanskrit Evam Vedic Vishwavidyalaya (MPSVV), Ujjain (M.P.)	2008	https://mpsvv.ac.in/
Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya (MGCGV), Satna (M.P.)	1991	http://gramodayachitrakoot.ac.in/
Makhanlal Chaturvedi National University of Journalism & Communication (MCU), Bhopal (M.P.)	1990	https://www.mcu.ac.in/
National Law Institute University (NLIU), Bhopal (M.P.)	1997	https://nliu.ac.in/
Pandit S. N. Shukla University (PTSNSU), Shahdol (M.P.)	2016	https://ptsnsuniversity.ac.in/
Raja Mansingh Tomar Music & Arts University (RMTMAU), Gwalior (M.P.)	2008	http://rmtmusicandartsuniversity. com/
Rajiv Gandhi ProdoyogikiVishwavidyalaya (RJPV), Bhopal (M.P.)	1998	https://www.rgpv.ac.in/
Rajmata Vijayaraje Scindia Krishi Vishwavidyalaya (RVSKV), Gwalior (M.P.)	2008	https://www.rvskvv.net/

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Rani Durgavati Vishwavidyalaya (RDV), Jabalpur (M.P.)	1956	http://www.rdunijbpin.org/
Sanchi University of Buddhist-Indic Studies (SUBIS), Bhopal (M.P.)	2013	https://www.sanchiuniv.edu.in/
Vikram University (VU), Ujjain (M.P.)	1957	https://vikramuniv.ac.in/

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REVIEW OF LITERATURE

Kothainayaki and Gopalakrishnan (2011) conducted a study on the websites of Agricultural universities in India. The authors stated that university websites are increasingly used for a wide variety of purposes, such as uploading the prospectus, library catalogue; promote achievement of individuals, research groups, new publications, etc. The authors evaluated the Agricultural Universities in India through webometrics method. A total of 54 Agricultural Universities were considered, which includes 44 State Agricultural Universities (SAUs), 1 Central University, 5 Deemed to be Universities, and 4 Central Universities. Various concepts like Google Page Rank, Alexa Traffic Rank, and rich files were considered for evaluation. It also presents the network diagrams showing the link structures between the web Ndes in webometric analysis. On the similar lines Sami and Basavaraj (2014) focused on evaluating how library websites of Agriculture research institutions are structured to ensure their usability and usefulness. General information about library, effectiveness of the homepage, content presentation, type of navigation used, type of user assistance made available, search facility provided and value additions included on the websites are the parameters on which evaluation is carried out. Use of graphics and multimedia for effective content presentation, virtual help to users, facility to search within the website and world wide web provision for online public access catalogue on library websites are some of the areas which need to be improved.

Verma and Shukla (2018) assess the serviceability, productivity and capability of Indian Institute of Management (IIMs) library websites. The methods employed were online surveys and observation. The study resulted in exhibiting the pros and cons of these libraries. Some of these libraries though had fine websites, igNred the fundamental serviceability characteristics and appears to be in prime phase of development. Majority of the IIM libraries had easy to use, manageable websites with efficient, serviceable qualities. Seshaiah and Rekha (2019) explore in their study on facilities, services and other information available on the library web pages of 246 engineering colleges in Andhra Pradesh. The outcome of the study reveals that most of the libraries of college websites provide information on their collection, hours, and electronic resources but consistency has to be ensured to achieve user satisfaction. Other features such as FAQs, web 2.0 applications, digital library and feedback facility have been used unwisely. Bulla and Hadagali (2020) assess the quality of the web sites, determine the extent of its user friendliness and its ability to meet the user requirements. Evaluating the performance and quality of the content of library websites of central universities in India.

RESEARCH METHODOLOGY

The data have been collected through survey and observation from the websites of the libraries of the two central government university and twentythree state government university, namely (1) Atal Bihari Vajpayee Hindi Vishwavidyalaya, Bhopal, (2) Awadesh Pratap Singh University, Rewa, (3) Barkatullaah University, Bhopal, (4) Chhindwara University, Chhindwara, (5) Devi Ahilya (6) Dharmashastra Vishwavidyalaya, Indore, National Law University, Jabalpur, (7) Dr. B. R. Ambedkar University of Social Sciences, Indore, awaharlal Nehru KrishiVishwavidyalaya, (8) Jabalpur, (9) Jiwaji University, Gwalior, (10) M.P. Bhoj (open) University, Bhopal, (11) Madhya PashuChikitsaVigyanVishwavidyalaya, Pradesh Jabalpur, (12)Maharaja Chhatrasal Bundelkhand Vishwavidyalaya, Chhatarpur, (13) Maharshi Panini Sanskrit Evam Vedic Vishwavidyalaya, Ujjain (14) Mahatma Gandhi ChitrakootGramodayaVishwavidyalaya, Satna, (15) Makhanlal Chaturvedi National University of Journalism & Communication, Bhopal, (16) National Law Institute University, Bhopal, (17) Pandit S N Shukla University, Shahdol, (18) Raja Mansingh Tomar Music & Arts University, Gwalior, (19) Rajiv Gandhi Prodoyogiki Vishwavidyalaya, Bhopal, (20) Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior, (21) Rani Durgavati Vishwavidyalaya, Jabalpur, (22) Sanchi University of Buddhist-Indic Studies, Bhopal (23) Vikram University, Ujjain (24) Dr.HarisinghGourVishwavidyalaya, Sagar and (25) Indira Gandhi National Tribal University, Amarkanta. A checklist has been developed and

used as a tool for collecting data from the websites. The data for the study has been collected from 20 Nvember to 17 December 2021.

Selection of the Problem

The problem selected for the present study is "Content Analysis of Central Government University and State Government University Library Websites in Madhya Pradesh State". The problem deals with overall assessment of contents of university library websites in Madhya Pradesh State on the basis of introduction, need, objectives, purpose, features etc.

Need and Purpose of the Study

The present study attempts to evaluate the contents of these central government university and state government university library web pages with the purpose to study the information available on the library websites, services and facilities provided on the websites/web-pages to improve the existing sites for providing relevant and informative information to the library users.

OBJECTIVES OF THE STUDY

The objectives of this study are as follows:

1. To Know the place and establishment year of central government university and state government universities in madhyapradesh

DATA COLLECTION, ANALYSIS AND INTERPRETATION

Table 1: Classification of Extension through extension service.

state.

- To kNw the how many central government university and state government universities having direct link to their library websites on parent website/webpage.
- 3. To kNw the general information provided by website which is useful of fruitful for users.
- 4. To kNw the Nn book (electronic, digital and optical) material and e-resources provided by universities library webpage/websites.
- 5. To identify the appropriate uniform resource locator (URL) extension of central government university and state government universities.

Significance of the Study

"The library is the heart of the any respective university academic institutions. In this present study investigates and analysed the content of university library websites available in central and state government universities in madhyapradesh state. In this study the library websites of the central and state government universities help their library users to give various information of fruitful resources i.e.-literature/materials/services through their online portal without library users physical appearance on the university library as well as save the time of library users. In this study also measures given university library websites as well as services and sources given by the central and state government university library websites" (Kumar, 2017).

URL extension	URL of Universities	N. of Universities
.edu.in	http://www.abvhv .edu.in/	03
	https://mpbou.edu.in/	
	https://www.sanchiuniv .edu.in/	
.ac.in	http://www.dhsgsu .ac.in/http://www.igntu .ac.in/	
	http://www.apsurewa .ac.in/	13
	http://www.bubhopal .ac.in/	
	https://www.dauniv .ac.in/	
	https://www.mpdnlu .ac.in/	
	https://www.mpsvv .ac.in/	
	http://gramodayachitrakoot .ac.in/	
	https://www.mcu .ac.in/	
	https://www.nliu .ac.in/	
	https://www.ptsnsuniversity .ac.in/	
	https://www.rgpv .ac.in/	
	https://www.vikramuniv .ac.in/	
.gov.in	https://cuc.mponline .gov.in/	01
in	https://brauss.in/	01

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.org	http://jnkvv.org/	
	http://ndvsu .org/	
	http://rdunijbpin .org/	03
.edu	http://www.jiwaji .edu/	01
.com	https://www.mchhatrasaluniversity.com/	
	http://rmtmusicandartsuniversity .com/	02
.net	https://www.rvskvv.net/	01

Table 1. Shows that there is ABVHV, MPBOU, and SANCHIUNIV state government universities have uniform resource locator (URL) extension with .edu.in which is used for academic institutes of India. DHSGSU, IGNTU, APSUREWA, BUBHOPAL, DAUNIV, MPDNLU, MPSVV, GRAMODAYACHITRAKOOT, MCU, NLIU, PTSNSUNIVERSITY, RGPV, and VIKRAMUNIV universities have uniform resource locator (URL) extension with .ac.in it represents academic institution of India. CUC university have uniform resource locator (URL) extension with .gov.in which is used for government website. BRAUSS university have uniform resource locator (URL) extension with.in which is used for Indian website. JNKVV, NDVSU and Rdunijbpin universities have uniform resource locator (URL) extension with .org which is used for organizational websites. JIWAJI university have uniform resource locator (URL) extension with .edu which is used for educational website. Mchhatrasal University and Rmtmusicandarts University university have uniform resource locator (URL) extension with .com which is used for commercial website. RVSKVV university have uniform resource locator (URL) extension with .net which is used for networking website.

Table 2: General Information available in library websites

Name of University	About Libraries	Member- ship	Mission Statement	Copyright	Address	Hit Counter	Date of Update
DHSGSU	Y	Y	Y	Y	Y	N	N
IGNTU	Y	Y	Y	Y	Y	Y	Y
ABVHV	Ν	Ν	Ν	Ν	Ν	Ν	Ν
MPBOU	Ν	Ν	Ν	Ν	Ν	Ν	Ν
SANCHIUNIV	Y	Υ	Y	Y	Y	Ν	Ν
APSUREWA	Y	Y	Y	Y	Y	Ν	Ν
BUBHOPAL	Y	Ν	Ν	Ν	Ν	Ν	Ν
DAUNIV	Y	Y	Y	Y	Y	Y	Y
MPDNLU	Y	Y	Y	Y	Y	Y	Ν
MPSVV	Y	Ν	Ν	Y	Y	Ν	Ν
Gramodaya Chitrakoot	Ν	Ν	Ν	Y	Y	Ν	Ν
MCU	Ν	Ν	Ν	Ν	Ν	Ν	Ν
NLIU	Y	Y	Y	Y	Y	Y	Ν
PTSNS University	Y	Ν	Ν	Ν	Y	Ν	Ν
RGPV	Y	Y	Y	Y	Y	Y	Υ
VIKRAMUNIV	Y	Y	Y	Y	Y	Y	Υ
CUC	Ν	Ν	Ν	Ν	Ν	Ν	Ν
BRAUS	Ν	Y	Ν	Ν	Ν	Ν	Ν
JNKVV	Y	Y	Y	Y	Y	Y	Υ
NDVSU	Y	Y	Y	Y	Y	Y	Y
RDUNIJBPIN	Y	Y	Y	Y	Y	Ν	Ν
JIWAJI	Y	Y	Y	Y	Y	Ν	Ν
Mchhatrasal University	Ν	Ν	Ν	Ν	Ν	Ν	Ν
Rmtmusicandarts University	Ν	Ν	Ν	Ν	Ν	Ν	Ν
RVSKVV	Ν	Ν	Ν	Ν	Ν	Y	Y

Y=Yes, N=No

Table 2. This study reveals that the DHSGSU, IGNTU, SANCHIUNIV, APSUREWA, DAUNIV, MPDNLU, NLIU, RGPV, VIKRAMUNIV, JNKVV, NDVSU, RDUNIJBPIN and JIWAJI universities provided information about their institution, about library, membership, mission statement copyright and address. Whereas only IGNTU, DAUNIV, RGPV, VIKRAMUNI, JNKVV, NDVSU and RVSKVV universities provided their hit counter and date of update and MPDNLU and NLIU university provided their hit counter information. BUBHOPAL, MPSVV and PTSNS University provides their about library information, BRAUS provides their membership information, MPSVV and Gramodaya Chitrakoot provides their copyright, address information and PTSNS University provides their address information. ABVHV, MPBOU, CUC, Mchhatrasal University and RMT Musicandarts University Nt give any information regarding about library, membership details, mission statement, copyright, address, hit counter and date of update of website.

Table 3. Give the information about the library

Name of University	Books	Journals	Reference service	Thesis	Reports	Newspapers	Back vol. of journal
DHSGSU	Y	Y	Y	Ν	Ν	Y	N
IGNTU	Y	Y	Y	Y	Y	Y	Y
ABVHV	Ν	Ν	Ν	Ν	Ν	Ν	Ν
MPBOU	Y	Ν	Ν	Ν	Ν	Ν	Ν
SANCHIUNIV	Y	Y	Y	Y	Y	Y	Y
APSUREWA	Y	Y	Y	Y	Ν	Y	Ν
BUBHOPAL	Y	Y	Y	Y	Ν	Y	Ν
DAUNIV	Y	Y	Y	Y	Y	Y	Y
MPDNLU	Y	Y	Y	Y	Y	Y	Y
MPSVV	Y	Y	Ν	Ν	Ν	Ν	Ν
Gramodaya Chitrakoot	Ν	Ν	Ν	Ν	Ν	Ν	Ν
MCU	Ν	Ν	Ν	Ν	Ν	Ν	Ν
NLIU	Y	Y	Y	Y	Y	Y	Y
PTSNS University	Y	Y	Ν	Ν	Ν	Ν	Ν
RGPV	Y	Y	Y	Y	Y	Y	Y
Vikram University	Y	Y	Y	Y	Y	Y	Y
CUC	Ν	Ν	Ν	Ν	Ν	Ν	Ν
BRAUS	Ν	Ν	Ν	Ν	Ν	Ν	Ν
JNKVV	Y	Y	Y	Y	Y	Y	Y
NDVSU	Y	Y	Y	Y	Y	Y	Y
RDUNIJBPIN	Y	Y	Y	Y	Y	Y	Y
JIWAJI	Y	Y	Y	Y	Y	Y	Y
Mchhatrasal University	Ν	Ν	Ν	Ν	Ν	Ν	Ν
RMT Musicand Arts University	Ν	Ν	Ν	Ν	Ν	Ν	Ν
RVSKVV	N	Ν	Ν	Ν	Ν	Ν	Ν

Table 3: Information about library collection

collections of state government university library websites and this present study reveals that the IGNTU, SANCHIUNIV, DAUNIV, MPDNLU, NLIU, RGPV, VIKRAMUNIV, JNKVV, NDVSU, RDUNIJBPIN and JIWAJI university libraries having collection of books, journals, reference service their reports, thesis, newspaper, and back volume of journals. DHSGSU, APSUREWA and BUBHOPAL university library having collection of books, journals, reference service, thesis, and newspaper. MPSVV and PTSNS University library having collection of books and journal.

Table 4. Give the information about the information of library services on their websites

Table 4: Information about library service.

Name of University	C.D Service	Web Opac	Video view	ILL	CAS/SDI	Database-Access	Email
DHSGSU	Y	Y	Y	Y	Y	Y	Y
IGNTU	Y	Y	Y	Y	Y	Y	Υ
ABVHV	Ν	Ν	Ν	Ν	Ν	Ν	Ν
MPBOU	Ν	Ν	Ν	Ν	Ν	Ν	Ν
SANCHIUNIV	Ν	Ν	Y	Ν	Ν	Y	Y
APSUREWA	Y	Ν	Ν	Y	Ν	Ν	Ν
BUBHOPAL	Ν	Ν	Ν	Ν	Ν	Ν	Ν
DAUNIV	Y	Y	Y	Y	Y	Y	Y
MPDNLU	Y	Y	Y	Y	Y	Y	Y
MPSVV	Ν	Ν	Ν	Ν	Ν	Ν	Y
Gramodaya Chitrakoot	Ν	Ν	Ν	Ν	Ν	Ν	Ν
MCU	Ν	Ν	Ν	Ν	Ν	Ν	Ν
NLIU	Y	Y	Y	Y	Y	Y	Y
PTSNS University	Ν	Ν	Ν	Ν	Ν	Ν	Ν
RGPV	Y	Y	Y	Y	Y	Y	Υ
VIKRAM University	Y	Y	Y	Y	Y	Y	Υ
CUC	Ν	Ν	Ν	Ν	Ν	Ν	Ν
BRAUS	Ν	Ν	Ν	Ν	Ν	Ν	Ν
JNKVV	Y	Y	Y	Y	Y	Y	Υ
NDVSU	Y	Y	Y	Y	Y	Y	Υ
RDUNIJBPIN	Y	Y	Y	Y	Y	Y	Y
JIWAJI	Y	Y	Y	Y	Y	Y	Y
Mchhatrasal University	Ν	Ν	Ν	Ν	Ν	Ν	Ν
Rmtmusicandarts University	Ν	Ν	Ν	Ν	Ν	Ν	Ν
RVSKVV	Ν	Ν	Ν	Ν	Ν	Ν	Ν

of the central and state government university in madhyapradesh. DHSGSU, IGNTU, DAINIV, MPDNLU, NLIU, RGPV, VIKRAMINIV, JNKVV, NDVSU, RDUNIJBPIN and JIWAJI university library websites were mentioned C.D services, web opac, video view, inter library loan, current awareness services/selective dissemination of information service, database e-access and email. APSUREWA university library website was mentioned C.D services and inter-library loan service. SANCHIUNIV university library website were mentioned video view, database e-access and email service.

Table 5. Depicts the Nn book material/e-resources available on university library websites which is

Table 5: Nn book material/E-resources.

Name of University	E-book	E-Journal	E-database	CD-Rom	CD/DVD
DHSGSU	Y	Y	Y	Y	Y
IGNTU	Y	Y	Y	Υ	Y
ABVHV	Ν	Ν	Ν	Ν	Ν
MPBOU	Ν	Ν	Ν	Ν	Ν
SANCHIUNIV	Y	Y	Y	Ν	Ν
APSUREWA	Ν	Ν	Y	Y	Y
BUBHOPAL	Ν	Ν	Ν	Ν	Ν
DAUNIV	Y	Y	Y	Υ	Y
MPDNLU	Y	Y	Y	Y	Y
MPSVV	Ν	Ν	Ν	Ν	Ν

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Gramodaya Chitrakoot	Ν	Ν	Ν	Ν	Ν
MCU	Ν	Ν	Ν	Ν	Ν
NLIU	Y	Y	Y	Y	Y
PTSNS University	Ν	Ν	Ν	Ν	Ν
RGPV	Y	Y	Y	Y	Y
VIKRAMUNIV	Y	Y	Y	Y	Y
CUC	Ν	Ν	Ν	Ν	Ν
BRAUS	Ν	Ν	Ν	Ν	Ν
JNKVV	Y	Y	Y	Y	Y
NDVSU	Y	Y	Υ	Y	Y
RDUNIJBPIN	Y	Y	Y	Y	Y
JIWAJI	Y	Y	Y	Y	Y
Mchhatrasal University	Ν	Ν	Ν	Ν	Ν
Rmtmusicandarts University	Ν	Ν	Ν	Ν	Ν
RVSKVV	Ν	Ν	Ν	Ν	Ν

so much fruitful for universities student/users. The above table shows that DHSGSU, IGNTU, DAUNIV, MPDNLU, NLIU, RGPV, Vikram University, JNVV, NDVSU, RDUNIJBPIN and JIWAJI university libraries subscribe e-books, e-journal, e-database, CD-Rom and CD/DVD. Only **Table 6 :** Link, searches and retrieve interface.

SANCHIUNIV have e-book and e-journal and only APSUREWA have e-database, CD-Rom and CD/ DVD.

Table 6. Give information regarding the link, searches, and retrieves interfaces given by the

Name of University	Download	News	Suggestion book	FAQs	Helpdesk	Ask a Librarian
DHSGSU	Ν	Ν	Ν	Ν	Ν	Ν
IGNTU	Y	Y	Υ	Y	Ν	Ν
ABVHV	Ν	Ν	Ν	Ν	Ν	Ν
MPBOU	Ν	Ν	Ν	Ν	Ν	Ν
SANCHIUNIV	Y	Y	Υ	Y	Ν	Ν
APSUREWA	Ν	Ν	Ν	Ν	Ν	Ν
BUBHOPAL	Ν	Ν	Ν	Ν	Ν	Ν
DAUNIV	Y	Y	Υ	Y	Ν	Ν
MPDNLU	Υ	Y	Y	Y	Ν	Ν
MPSVV	Ν	Ν	Ν	Ν	Ν	Ν
Gramodaya Chitrakoot	Ν	Ν	Ν	Ν	Ν	Ν
MCU	Ν	Ν	Ν	Ν	Ν	Ν
NLIU	Y	Y	Υ	Y	Y	Ν
PTSNS University	Ν	Ν	Ν	Ν	Ν	Ν
RGPV	Y	Y	Υ	Y	Y	Ν
VIKRAMUNIV	Y	Y	Υ	Y	Y	Ν
CUC	Ν	Ν	Ν	Ν	Ν	Ν
BRAUS	Ν	Ν	Ν	Ν	Ν	Ν
JNKVV	Y	Y	Υ	Y	Y	Ν
NDVSU	Υ	Y	Y	Y	Y	Ν
RDUNIJBPIN	Y	Y	Υ	Y	Ν	Ν
JIWAJI	Y	Y	Υ	Y	Ν	Ν
Mchhatrasal University	Ν	Ν	Ν	Ν	Ν	Ν
Rmtmusicandarts University	Ν	Ν	Ν	Ν	Ν	Ν
RVSKVV	Ν	Ν	Ν	Ν	Ν	Ν

central and state government university library websites. The above table it shows that only IGNTU, SANCHIUNIV, DAUNIV, MPDNLU, NLIU, RGPV, VIKRAMUNIV, JNKVV, NDVSU, RDUNIJBPIN and JIWAJI have provided download, news, suggestion book and FAQs facility. NLIU, RGPV, VIKRAMUNIV, JNKVV and NDVSU have provides helpdesk contacts on their library website.

Table 7 shows that SANCHIUNIV, APSUREWA,

Table 7: Accessibility of web page/sites

Accessibility of web pages	Frequency	Percentage (%)
Direct link of parent webpage	08 = DHSGSU, IGNTU, DAUNIV, NLIU, VIKRAMUNIV, JNKVV, NDVSU and JIWAJI	32.00%
Link under facilities/Tab etc. Under the title Central library/library	11 = SANCHIUNIV, APSUREWA, BUBHOPAL, MPDNLU, MPSVV, GRAMODAYA CHITRAKOOT, PTSNS UNIVERSIT, RGPV, CUC, BRAUSS, RDUNIJBPIN	44.00%
Library webpage is Not available	06 = ABVHV, MPBOU, GRAMODAYA CHITRAKOOT, MCU, CUC, BRAUS, MCHHATRASAL UNIVERSITY and RMTMUSICANDARTS UNIVERSITY	24.00%

BUBHOPAL, MPDNLU, MPSVV, Gramodaya Chitrakoot, PTSNS University, RGPV, CUC, BRAUSS and RDUNIJBPIN have their link of library under facilities, ABVHV, MPBOU, Gramodaya Chitrakoot, MCU, CUC, BRAUS, Mchhatrasal University and Rmtmusicandarts University have their library webpage is Nt available and only DHSGSU, IGNTU, DAUNIV, NLIU, VIKRAMUNIV, JNKVV, NDVSU and JIWAJI have direct link on parent webpage.

FINDINGS

This present research shows the content analysis of the university websites of these libraries

- 1. Most of the central and state government universities in madhyapradesh state have a good and sufficient collection of reading materials i.e.-books, journals/periodicals, electronic resources, newspapers/magazine, and these.
- 2. In this study maximum the central and state university library websites have a social media tool, i.e. FAQ's, email, Telephone, google location and contact details information.
- 3. In this research it is also show that the most of the central and state government universities in madhyapradesh state have information about the library, membership, mission statement, copyright, and e-resources.
- 4. Most of the university websites having all basic services which is helpful for his/her users to fulfil their queries.

CONCLUSIONS

The library is the heart of any university. A university library websites or webpage helps to create and build a long and strong relationship between the university library and its users. University library websites provided the information to the library user without any physical appearance of user in library this save the time, energy and money of user. This present study shows the overview of content available all central and state government university library websites in madhyapradesh state.

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Analysis of Nuclear Medicine Research using Web of Science Database: A Global Perspective

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Abstract

The study aimed to assess the Nuclear Medicine research output from 1991 to 2020. Totally 12632 data were mainly collected from the web of science database. These data were downloaded and analyzed by using MS Excel as per the objective of the study. The researcher has been done to discover the development and properties of large data output is the global level. The year-wise distribution of Nuclear Medicine research. The study revealed the year 2020 occupied the first position with 771 (6.10) records, followed by the year 2019 with 677(5.36) records compared to 1991 to 2020. Author-wise distribution of publication showed that Rubello, D occupied the first position with 81(0.64%) and Signore, A is the second position with 72 (0.57%) and others. In this study single author contributed 1776 (14.06) papers in this study. The relative growth rate and doubling time the growth of publications decreased trend, the corresponding doubling time was increased.

Keywords: Scientometrics; Nuclear Medicine; Web of Science; Authorship pattern; Relative Growth Rate and Doubling Time.

INTRODUCTION

Scientometric analysis in research centers and universities should be considered for different reasons. The main purpose of scientometric

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Received on: 29.11.2021 **Accepted on:** 30.12.2021 studies is to become aware of an existing situation, to compare the different subject areas and universities, and to improve the academic ranking of universities and institutions Identifying top scientists, institutions, universities and other factors related to publications can help make better academic communications and cooperation's possible. Since scientificcommunication acts as a key role in achieving new insights, measurement and valuation of scientific publications have always attracted the attention of scientometric experts. Scientometric is a quantitative statistical analysis of scientific documents based on four main variables: authors, citations, references, and publications. Scientometrics is the interdisciplinary knowledge that reviews the widescope of fields

Authors Affiliation:

in multi-dimensional quantitative research. Quantitative evaluation of scientific activities is an important factor for the development andcan help Policymakers to provide more solutions to research problems.

Nuclear medicine is a branch of medicine in which patients are given radioactive substances (to be taken internally) either to diagnose or to treat a disease. This differs from traditional radiology and radiotherapy techniques, where radiation isnormally applied from an external source. Nuclearmedicine has become quite widespread since itsinception in the 1950s, and nuclear medicine departments can be found in most medium and large hospitals. A common use of nuclear medicine therapy is in the treatment of thyroid cancer. Nuclear medicine is more frequently used in the diagnosis of disease.

REVIEW OF LITERATURE

Vijayakumar, Sivasubramaniyan, and Rao (2019) carried out the "Bibliometrics analysis of the Indian Journal of Nuclear medicine during the period 2014-2018". The data came from the Scopus bibliographic data base for the study. The main objectives of th estudy are authorship patterns, the most prolific authors, most productive countries. Theyreported 513 papers published in the study period. 2017 was the most productive year, with 114 (22.22%) publications. The highest citation was received in the year 2014 with 195(36.25%). The high frequented keywords are "Human" which is the topper with 434 (84.60%) publications. The most productive journal in India with 388 (75.63%) publications.

Mini Devi (2015) initiated a study entitled "Scientometrics analysis of the growth of literature in Nuclear Medicine". The data were retrieved from the Web of Science database core collection provided by Thomson Reuters from 1999 to 2014. Some aim was used in this study, such as relative growth rate, doubling time, growth of publications, and exponential growth of publications. This study may cover medical policymakers to facilitate researcher-friendly infrastructure and other essential supporting facilities.

Venkatesan and Thanuskodi (2014) observed nuclear power generation research seenthrough

Scopusresearch from 1980 to 2012 retrieved from the Scopus data base. A total of 9512 papers were published in nuclear power Generation research. The study aims to analyze the Year-wise growth of publications, country-wise distribution, subjectwise, highly cited papers, and institution-wise distribution, etc. The result of the study observed the highest number of papers was published in the year 2008 and it was 745. The most productive author was identified as Anon with 116 articles published. In the most productive countries, the USA has the first position with 24% publications. This study revealed that the contribution of nuclear power generation research is gradually rising.

Gupta (2012) carried out heredity blood disorder research during 2002-2011. The data came from the Scopus data base for thes tudy. The study results showed that Hemophilia is the most productive journal. 2010 is the most productive journal with 123 publications. The study concluded that the Indian government has already taken some steps in this direction, but they are not adequate to take care of all patients associated with hereditary blood disorders in India.

OBJECTIVE OF THE STUDY

- a. To analyze the growth of publication of nuclear medicine research output during the year 1991-2020 and find the annual growth rate of publications in nuclear medicine research;
- b. To find out the Relative Growth Rate (RGR) and Doubling Time (Dt) of year-wise distribution and
- c. To identify the author Vs Publications in nuclear medicine research.

METHODOLOGY

This study has been assumed with the purpose of finding the Nuclear Medicine research in scientometrics. It also focuses on the past area of Nuclear Medicine publications in scientometrics based on the sample data. In this study, data were downloaded from the Web of Science database. The study period was from 1991-2020. A total of 12632 records were downloaded and analyzed by using MS office Excel 2010 format using.

DATA ANALYSIS



Fig. 1: Growth of Publications in Nuclear Medicine.

Figure 1 reveals that from 1991 to 2020, 12,632 publications were published on Nuclear Medicine research. The highest number of publications is 771 published in 2020. The lowest publications of 170 were published in 1992. But it is seen in the table that there is an increasing trend of growth literature in the study period.

Annual Growth Rate of Nuclear Medicine Publications

Annual Growth Rate (AGR) of Nuclear Medicine

research publications during the study period. Annual growth rate denotes the percentage change of a particular variable viz., publications within a specific period in acontext.

The Annual Growth Rate (AGR) was calculated using the formula:

$$AGR = \frac{Endvalue - Firstvalue}{Firstvalue} *100$$



Fig. 2: Annual Growth Rate of Publications.

Figure-2 shows that the annual growth rate of the calculated total output of the annual publication ranges from-2.30 to13.88 over the1991-2020 study period. The annual growth rate was 40.00 in1993, which increased and decreased to -7.56 in1994.

Since then, there has been variation over the next year as illustrated in Figure 2. there is on for the fluctuation is that there is no stable growth of output every year.

RELATIVE GROWTH RATE AND DOUBLINGTIME

The analysis of the growth of the nuclear medical research publication is one of the essential aspects of this discussion. This analysis aims to identify the development of present research trends and opportunities. However, the explosion of the Nuclear Medicine literature has made it very difficult for scientists to keep up with the latest developments in their fields. Therefore, the main responsibility of librarians is to provide information seekers to meet the information needs of scientists in various fields. Published literature is taken as a measure of knowledge in a field, and the growth of nuclear medical literature is determined by calculating relative growth rates and doubling the time for publications. In theresearch format, the details of this model were illustrated. The table predicts the comparative growth rate and doubling time of volume years for the total research output of nuclear medicine..



Fig. 3: Relative Growth Rate and Doubling Time.

Figure-3 denoted the Relative Growth Rate (RGR) of Nuclear Medicine research for the study period. The Relative Growth Rate and Doubling Time of publications were given in the above table. It can be seen that the relative Growth Rate of publication decreased from the rate of 0.68 in 1992 to 0.06 in the year 2020. The mean relative growth for the first ten years (i.e. 1991 to 2000) showed a growth rate of 0.272 whereas the mean relative growth rate for the second ten years (i.e. 2011 to 2010) decreased to 0.091 and last ten years (i.e. 2011 to 2020) decreased

AUTHORSHIP PATTERN OF NUCLEAR MEDICINE RESEARCH

The Authorship Pattern Vs Number of Publications revealed that the Authorship Pattern in Nuclear Medicine literature fluctuates from single-authored publications to 78 authored publications during the study period 1991-2020. As per the analysis of the table, the highest number of research output by single-authored was 1776 (14.06%) contributions followed by double authored contributions was to 0.066. The corresponding Doubling Time between different years gradually increased from 1.02 in 1992 to 2015. In the last seven years, there is no constant growth of output. The mean Doubling Time's first Ten years (i.e. 1991 to 2000) was only 2.73 which increased to 7.689 next ten years (i.e. 2001 to2010) and the last ten years increased 10.60 (i.e. 2011 to 2020). Thus, as the rate of growth of publication decreased trend, the corresponding Doubling Time was increased.

1651 (13.07%) and three authored contributions were 1590 (12.59%). The largest collection had been designed by publications with single-authored to six authored. It was also concluded that only one publication was contributed by 78 authors. It displays that collaborative research ruled over specific research in the study. There were some anonymous contributions found with 314 publications (2.49%) in the authorship pattern of Nuclear Medicine Research. N Rathika, S Thanuskodi/ Analysis of Nuclear Medicine Research using Web of Science Database: A Global Perspective



Fig.4: Authors Vs Publications in Nuclear Medicine Research.

Figure 4 was concerned with Authors Vs Number of Publications. There were 61819 authors of nuclear medical literature for the study period from 1991 to 2020. In place of the authors, only 50 authors were considered and listed in the table. Rubello, D of Hospital Santa Maria Della Misericordia from Italy became the topper amongst all the authors. He published 81 (0.64%), followed by the H-Index value of 25, Signore, A from Italy's published 72 (0.57%) and the h-index value is 23 and Lassmann, M from Germany become the third topper with 64 publications (0.51) and the h- index is 26, respectively. It was also noted that most of the authors belonged to Europeancountries.

CONCLUSION

The results bring in by a scientometric study are of practical value to researchers and planners in the management of research actions in the discipline and from the point of view of nuclear medicine, this study may lay concrete on the way for medical policymakers to facilitate a researchfriendly atmosphere by providing more money, infrastructure and other essential supporting facilities that improves and enhances the research being conducted in the field.

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Structure of Topic Utility Program in University Library

B V Chalukya

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Abstract

The disciplinary level, contribution, and influence have become the core competitiveness of universities as higher education shifts from the mode of extensive growth, which focuses on expanding school scale, to the mode of intensive growth, which focuses on discipline structure and quality improvement. It places more demands on the high school library's utility responsibility, forcing the digital library to respond more quickly, create and amend growth plans on time, and achieve the coordinated growth of technology, resources, and utilities. As a result, it's more important than ever to build the library discipline utilityprogram.

Keywords: Topic utilities to university library; Topic structure; Assemble topic utility program etc.

INTRODUCTION

The university library utility is an important aspect of adapting to the topicstructure and enhancing the level of scientific research, which is the long-term growth trend of university library utilities, due to the clear characteristics of university topics and majors. For more than ten years, the topic librarians system in Chinese universities has been defunct. During this time, the relationship between the libraries and the professors and students has improved.

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Received on: 12.01.2021 Accepted on: 16.02.2022 user demands, promotion of resources and utilities, user training, quality reference, and other utilities have all improved at the libraries.However, in today's information environment and changing user expectations, many issues remain in the topicutility in the majority of our colleges, such as poor communication, sluggish utility, and a lack of excitement. As a result, the following issues should be seriously considered by university libraries: how to adapt to the new circumstances, how to innovate topic utilities, how to build additional utilities to satisfy the unique needs of users, and how to better utilize library resources and utility.

Collection structure optimization, awareness of

THE REQUIREMENT OF TOPICUTILITYS TO UNIVERSITY LIBRARY

The topicutility is an extension of standard library reference consultations, in which topic librarians are involved in the users' study or teaching environments (including the physical environment and network environment). It delivers tailored information utility to users' research and work based on document resources, exemplifying the libraries' innovation and personalized utility's. University libraries benefit from information resources as well as human resources for utilities. Providing topicutility's to professors and students can help to advance the topicstructure as well as the universities themselves.

Need of Topicutility for Topicstructure

The primary goals of topicstructure in universities are to focus on discipline direction, assemble topic teams, and create topic bases. The following is a collection of school topics. Through the examination of their themes, libraries utilize knowledge as a mining tool to organize and analyze the information resources of carriers both at home and abroad for a certain topic. It can lead to the discovery of a topic's direction. The key study directions of the topic can be determined based on the current state of growth of the topic in school. We must assure the concentration of the researchers' human resources and the stability of the research issue when forming an academic team. The libraries' information resources include a variety of topicutility's that can assist academic researchers in mastering study topics in a variety of fields. As a result, their topic study will be in line with current growth trends, avoiding topic "drift" and marginalization. Libraries foster a positive academic and information environment that is conducive to attracting and keeping topic-matter experts. The creation of a topic base in the realms of documents, information, knowledge, and utility's is considerably aided by assembling topic teams.

Need of Topicutility for Growth

The university library is an integral aspect of the overall higher education system. On the one hand, reforming the traditional library utility model and implementing topicutilities can increase the use rate of document resources, allowing teachers and researchers to obtain topic knowledge of referential value from libraries. The use of topicutilities, on the other hand, places a far larger demand on librarians for their comprehensive quality.Establishing a topic librarian system and providing topicutility's will assist them in identifying librarian potential, demonstrating librarian initiation, and stimulating their enthusiasm for work, all of which will encourage librarians to improve their business learning and master the skills of documentation and information utility's. Topic librarians provide

teachers and researchers with additional scientific and research assistance as part of an innovative topic information utility. These can effectively increase the academic stature of libraries and the self-image of librarians, resulting in a positive social climate for library innovation and growth.

PURPOSE AND EXERCISEAL PLAN FOR ASSEMBLE TOPICUTILITY PROGRAM:

The Purposes of Assemble to Picutility Program

The Internet's growth trend is established against the backdrop of Web3.0, which is built on a collection of user requests. From resource-oriented and technology-driven utility's to the current dominating phase of utility, digital libraries have evolved. The library utility model is being transformed into a personalized information utility that is oriented on the people. The digital resources are used to produce utility content. In addition, the focus of utility is shifted to electronic document and information consultancy utilities. As a result, the creation of a topic utilityprogram in libraries must be founded on the information needs of users, with the goal of addressing those demands and resolving problems. It needs to be constructed on a foundation of extensive topic knowledge and information resources. Using sophisticated information technology approaches to successfully integrate resources, technology, utilities, and users, libraries are upgraded from "repository libraries" to "knowledge utility libraries." The system's design must be built on the Internet mode, with increased levels of openness and engagement.

Exerciseal Plan

The following five exercisable modules make up the topicutilityprogram.

The topic gateways: resource navigation: a. a topic classification system is required. All materials from diverse topics in and out of the libraries should be grouped and revealed according to a topic classification system. The librarians' secondary processing and rearrangement of materials should be permitted, allowing for the progressive structure of linkages between resources. Onestop search: the search system must be capable of retrieving all of the program's resources. The program displays and makes the search results visible. In addition, the search model will shift from keyword to semantic search over time.

- b. The referential consultation: real-time advice and offline consultation: to support a variety of real-time embedded consulting tools, such as IM, MSN, QQ, and other offline consultative methods, such as Email, online forms, and other offline consultative approaches; Knowledge base: to allow librarians and users to add content while also providing content control mechanisms based on topic knowledge; Expert Q & A: An open Q&A mechanism from experts, as well as specific incentives, are to be implemented, with the goal of involving more and more experts in themes covered by the virtual utility.
- c. Training management: to publish all types of training information and programs, to summarize training statistics, and to collect training feedback; information literacy training: to publish all types of training information and programs; Self-training: opening online classrooms, providing an information literacy exam system, providing simulated warfare, assisting in the submission of work training, and so on.
- d. The personalized utility: customized interface and retrieval: allowing users to customize the interface according to their preferences and automatically displaying key terms based on their habits; Web2.0 utility's: integrate Web2.0 tools and provide Web2.0 utility's, such as customized RSS, Tags, and so on; mobile utility's: support smart phones, tablet PCs, and other mobile devices, as well as providing mobile applications and utility's; Embedded utility's: to support embedded users' personal data and facilitate smooth docking with other information systems.
- e. The back-stage management includes systematic management, which includes user management, system parameter management, and security management; data management, which includes data resource management, data quality control, and data usage statistics; and utility management, which includes utility distribution, response time, utility process design, and utility process control, among other things.

FINDINGS

Recovering the Level of Combination:

The topicutilityprogram should be compatible with other library exercisable modules, allowing users to access relevant utilities. The utilities provided by the libraries are thus integrated as a whole. At the same time, the related information should be integrated between the topic utility program and the management systems of the relevant school departments, allowing for mutually impacted, cooperatively established, and shared information. The greater the level of combination of the topic utility program, the better the user experience will be, and the more advantageous the topicutility program will become.

Growth and Structure of Topicutility program:

The evolution of the topicutilityprogram is ongoing and relative. The growth and design of a topicutilityprogram over time is guided by the disciplines and demands of topic utilities at the time. With the advancement of information technology and changes in the notion of topic utility's, the fields, depth, and methods of topic utilities have all changed at different times. As a result, distinct needs for topic utility program exercises emerge. As a result, the topic utility program must be able to keep up with the growth of demand topic utilities in libraries.

The scalability of a topic utility program should be taken into account throughout growth and structure. The program should be extended to the utilities of some new topics, or combined with additional resources and scalability utilities in the existing modules, as the needs of the topic utility's and the utility target change. Its goal is to address the particular needs of topic utility's and their utility aims in school while also playing and demonstrating all of the topic utility's' qualities.

CONCLUSION

The key evolutionary orientation of the future assemble of the topic utility program will be the topic utility program built by the university itself or outsourced. Whether it is built in-house or out sourced, the primary issues must be addressed, namely, recovering the program's level of combination, the long-term viability of its growth and structure, and its scalability.

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Impact of library Automation Services in Government First Grade College Libraries in Kolar District: A Survey

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Abstract

To investigate the impact of Library automation services in Government First Grade college libraries in kolar district. The investigators used a questionnaire and interviews. They chose samples on the basis of a stratified sampling method and administered the questionnaire according to a random method for collecting the data. In this study revealed that 7 of 8 libraries are completely automated. Seventy per cent of librarians believe that automation has improved their library's services, while 85 per cent of users believe that an automated library system is better than the traditional manual system. Of the eight libraries, one library has a shortage of general staff to deal with automation services. The investigators could only select all the institutions for his study. Although so many studies of the same kind have already been conducted on library automation services in different areas of world, this paper revealed the current status of library automation services in Government First grade college libraries in kolar district.

Keywords: Library automation; Government First grade college libraries in kolar district.

INTRODUCTION

In the data processor generation, information must be careful and ingrained in the practice of learning, but the adulthood and intricacy of technical message in all lozenges of science and technology catarrh a problem in the amassment, storage and dissemination of information. With the introduction of computers and message and

Authors Affiliation: Librarian, Government First Grade College, Kolar 563122, Karnataka, India. Address for Correspondence: K C Babu Prasad, Librarian, Government First Grade College, Kolar 563122, Karnataka, India E-mail: babuprasadkc@gmail.com Received on: 04.01.2021 Accepted on: 12.02.2022 communication technology drive, libraries are on the outset of automation.

According to the Webster's online dictionary, automation is the manner or system of operant or controlling a process by highly automaton like means, as by electronic devices, reducing earthborn interposition to a minimum. At Government First grade colleges in kolar harsh academic institutions, such as the Research and Development Organization, have taken the direction in library automation.

When computer and information technology are used in library operations, such as for acquisition, cataloguing, circulation and serial control, it is considered an automated library¹ (Ahmad and Iqbal, 2009). Library automation is rapidly becoming an essential tool in support of effective customer services, stock management and management of services offered by libraries⁶ (Rai and Kumar, 2011).

ACADEMIC INSTITUTES IN THE STUDY

For this study, the investigators have selected eight academic institutes because these institutes are the only ones to have taken some initiatives regarding automation at government college libraries.

Government First Grade College, Kolar

The government first grade college, kolar was established the 1948. The GFGC, Kolar Library has a collection of approximately 1,50,000 books on Science, Commerce and Humanities topics, and the library subscribes to prominent national and international journals. The GFGC, Kolar Library uses Easy Lib automation software, providing the various automation services.

Government College for women, Kolar

Established in 1984, the Govt.College for women, Kolar (GWCK) amassed a large collection of information Science,Commerce and Humanities topics 68,650. The GWCK adopted the EASYLIB software for library automation. In addition, the institute subscribes to national and international journals and newsletters related to technology, computers and many other significant subjects.

Government First Grade College, Bangarpet

GFGC Bangarpet Library caters to the needs of Under Graduate students and Staff. The Library building is allocated a total area of 1200sq.ft.

The College library has a 27707 of books, it subscribes to 20 periodicals in various disciplines of Arts, Commerce and Management and science streams

The College has got a Library with a good collection of Books, Journals and E-resources to facilitate learning and research activities of students as well as teachers. The Library of the college has been active in conducting many activities like Book Review Competition, Best Library User Award etc., to attract and encourage the reading habit among the students.The GFGCB is using E-Granthalaya free library software for the smooth functioning of the library.

Government First Grade College, Malur

Govt. First Grade College, Malur (GFGCM) Library is the heart of any institution and it is the place where knowledge resides in. The library situated in the ground floor of the college. It is established in the year 1988 with modern collection, knowledge resources and innovative information to meet the needs of the college. The library has a total of 41124 books and 15 magazines/journals, 15 state news papers, 10 local news papers. Each department has its own library. Circulation counter is made available for issue, return and renewal of books. Educational CD/DVDs on different subjects are available for students use. The library is open on all the days except Sundays and general holidays. It operates from 9AM to 4.30 PM from Monday to Friday and 9 AM to 2PM on Saturdays. A student can borrow 2 books in their name and they can keep the books for 15 days. Reference books are not allowed to take out of the library. New books are added to the library each year. Library is facilitated with computers and internet connection to enable the students and teachers to search easily the required teaching -learning resources. The GFGCM is using E-Granthalaya open-source library software for the smooth functioning of the library.

Government First Grade College, Srinivaspur

Government First Grade College, Srinivaspur (GFGCS) was established in 1985, with limited programmes like Arts, Science, Commerce and Management degree. The GFGCS has a digital library stocked with a collection of books, journals and periodicals, newspapers, audiocassettes and compact discs. The library has 22,450 books, subscribes to at least 13 journals and magazines on various topics and uses the Easy Lib software for library automation.

Government First Grade College, Mulbagal

Government First Grade College, Mulbagal (GFGCM) was established in 1970, with limited programmes like Arts, Science, Commerce and Management degree. The GFGCM has a digital library stocked with a collection of books, journals and periodicals, newspapers, audiocassettes and compact discs. The library has 25,145 books, subscribes to at least 18 journals and magazines on various topics and uses the Easy Lib software for library automation.

Government First Grade College, Bangaru Thirupati

Govt. First Grade College, Bangaru Thirupati (GFGCBT) was established in 2007, with limited programmes like Arts, Science, Commerce and Management degree. The GFGCBT has a digital library stocked with a collection of books, journals and periodicals, newspapers, audiocassettes and compact discs. The library has 8500 books, subscribes to at least 8 journals and magazines on various topics and uses the Easy Lib software for library automation.

Govt. First Grade College, KGF

Govt. First Grade College, KGF (GFGCK) was established in 2007, with limited programmes like Arts, Science, Commerce and Management degree. The GFGCK has a digital library stocked with a collection of books, journals and periodicals, newspapers, audiocassettes and compact discs. The library has 17555 books, subscribes to at least 2 journals and 8 magazines on various topics and partially completed library automation.

LIBRARY AUTOMATION SOFTWARE PACKAGES

There are many proprietary library management software packages available in the market. Some of the more popular include those described below.

Easy Lib

Easy Lib is a library automation package of Soft link International Company. Over the last 20 to 25 years it has grown and achieved the status of leading library automation software in India.

NETLIB

It is an integrated multi-user library management system that supports all in-house operations of the library. NETLIB consists of modules on acquisition, cataloguing, circulation, serials, article indexing and online public access catalogue (OPAC).

TechLib

It is an ILS software that performs all the operations and activities of a library, supports the OPAC, catalogue maintenance, circulation, serials management, acquisition, processing and MARC cataloguing. It is developed by Information Dimension Inc. (IDI)

in Dublin, Ohio, USA.

LIBSYS

It is integrated library management system software and is a product of LIBSYS Ltd., New Delhi. It supports acquisition, cataloguing, circulation, serials, article indexing, Web-OPAC and report modules.

VIRTUA

It is integrated library system software that has been developed by Virginia Tech Library System Inc., Virginia. The various modules of VIRTUA are: acquisitions and fund accounting, cataloguing, circulation, serials control, OPAC, and statistics and reporting.

e-Granthalaya

e-Granthalaya is a Library Management Software developed by National Informatics Centre, Ministry of Electronics and Information Technology, Government of India. e-Granthalaya is useful for automation of in-house activities of libraries and to provide various online member services. The software provides built-in Web OPAC interface to publish the library catalog over Internet. The software is UNICODE Compliant thus, supports data entry in local languages. Latest version of e-Granthalaya i.e. Ver. 4.0 is a 'Cloud Ready Application' and provides a Web-based data entry solution in enterprise mode with a centralized database for cluster of libraries. e-Granthalaya 4.0 uses Postgre SQL - an Open Source DBMS as backend database solution and is made available in NIC National Cloud (Meghraj) for Government Libraries on request basis with hosting of application and databases for online access.

REVIEW OF THE LITERATURE

The review of related studies is essential in any new research topic and the establishment of any research foundation. Kumar (2003) studied the automation processes of four university libraries in Haryana. The study's major objectives were:

- a. To foreground the history of each library's automation outgrowth;
- b. To cane which hardware and software bale are in use;
- c. To manifest which secant and avail have been or are being machine-driven by each; and
- d. What has been the impact of automation and what, if any, impediments have been compare.

The contemplation close that all libraries have machine-driven a number of activities and have application other templet of automation. There has been a horrible improvement in library benefit and, ultimately, the systems will be fully electronic.

Thapa and Sahoo (2007) surveyed several libraries in Bhopal to understand the problems imposed by automation in contrast to routine activities used in other libraries.¹²

Questionnaires were distributed among 8 libraries in Bhopal. Results indicated that 15 libraries encountered pre-automation problems, with the 16th library reporting that, to date, it had encountered no problems. Thirteen libraries surveyed, however, did report post-automation difficulties while four experienced no trouble. Overall, 14 libraries said that automation has been a significant benefit to their operation.

In 2005, *Suku and Pillai* (2005) conducted a comprehensive survey of automation's impact on every library in Kerala. The survey indicated that the libraries' computerization activities in some libraries were progressing slowly. The activities studied included information technology infrastructure, in-house activities, information services and usage, manpower development and budget. The paper briefly describes the role of the INFLIBNET Centre in accelerating the automation activities of university libraries.¹¹

Ghanaian libraries were studied by Amekuedee (2005) who conducted a study to determine and evaluate library automation in selected Ghanaian university libraries.⁴

The author covered the areas of general automation, automation of specific library processes, networking, Internet connectivity, training and major constraints. He discovered that most of the libraries are hampered by lack of funds, lack of support from the university administration and lack of skilled staff to embark on automation of all libraries. It was also revealed that none of the libraries have on OPAC system.

Sani and Tiamiyu (2005) created a questionnaire and interviewed administrators, teaching/nonteaching staff, students and researchers in the universities to evaluate the automated services in selected Nigerian universities. It was found that automated services were far from adequate and that, of the 29 different automated services that one would expect in a modern university, only about 40 per cent were available and utilized.¹⁰

Federal universities that had enjoyed higher levels of funding for automated systems had higher output of automated services than the nonfederal universities. Major obstacles militating against the automated services in the universities included inadequate funds, interrupted electricity supply and telecommunications connectivity, as well as inadequate levels of trained manpower to manage and administer the automated systems. Respondents were marginally satisfied with the services of the computerized accounting system and the management information system-related databases, but were very dissatisfied with the level of automated library services.

Ahmad and Iqbal (2009) presented a case study of the ABIMS, focusing primarily on implementation of library automation of its institute's library. The study also discussed why Al-Barkaat Educational Society established the ABIMS, why they chose Alice for Windows library software for its library automation and provided a detailed overview of various modules of AFW library software.¹

Ossai-Ugbah (2010) administered a questionnaire to students, and found that the majority of the users agreed that there is a significant relationship between educational academic exposure to the use of automated library services and that they were satisfied with these automated electronic library services. However, the major constraints identified by the respondents were slow Internet speed, and that access to automated library facilities were not up and running at all times to meet the varied time students prefer to browse the Internet. The research recommended institutions enlarge their Internet bandwidth and make it available any time of day or night so students are free to make use of it.⁷

Jayaprakash and Balasubramania (2011) created and administered a questionnaire designed to investigate automation in university libraries in Tamil Nadu, India. The authors concluded that automation is essential for efficient library operations and to help save library users' time. The questionnaire results also explained the problems imposed by authorities and staff during and after the automation process.⁵

Mohammad Anas and Jafar Iqbal (2014) created and administered a questionnaire designed to investigate automation in selected management institutes at Aligarh. The meditation demonstrated how automation of libraries of newly trade institutes are office in an effort to match at least the leas requirements indispensable to aid the users' widen and involved informational indispensably and imposition. Overall, it is a well-established reality that the library and information system is the essence of any institute and necessarily to be invigorate through automation.²

OBJECTIVES OF THE STUDY

The primary objective of the study is to investigate

the impact of automation on library management services at Aligarh. The other objectives of the study included:

- e. To know the starting year and confer state of automation services in government first grade college libraries.
- f. To discover the impact of library automation services of government first grade college libraries.
- g. To decide the several software packages requisite by government first grade college libraries for automation.
- h. To recognize the barriers to library automation services confronting librarians.
- i. To identify library functions and services being automated in government first Grade College libraries.
- j. To realize the users' opinions, awareness and satisfaction regarding automated systems in government first grade college libraries in kolar district.

HYPOTHESIS

All the Government first grade colleges of kolar district are automated and most of the users are satisfied with the services and facilities provided by the government first grade colleges of kolar district.

METHODOLOGY

The present study is being conducted on a sample of 1000 users of eight selected government first grade colleges of kolar district. The methods used included questionnaires and informal interviews of librarians. The investigators choose the sample on the basis of a stratified sampling method and administered the questionnaire according to a random method.

SCOPE AND LIMITATION OF THE STUDY Kolar is one of the instructive hubs of south India,

caters to the necessarily of the students of diversified strata in rhythmical fields of education. Despite the abundant instructive benefit in the country, the investigators could hide eight government first brand colleges of kolar rigorous for as much as of delay and logical constraints.

ANALYSIS AND INTERPRETATION

One hundred questionnaires were administrated among degree students attending the eight institutions because the numbers of seats for Arts, Science, Commerce & Management students are the same in each institution.

Year of starting automation

Table I indicates that GFGC Kolar was clearly the first to initiate library automation in the area and GFGC KGF was the last of the eight.

Table 1: Year of starting automation.

Name of institute	Year
Govt. First Grade College, Kolar	2003
Govt. Womens College, Kolar	2005
Govt. First Grade College, Mulbagal	2005
Govt. First Grade College, Bangarpet	2008
Govt. First Grade College, Srinivaspur	2010
Govt. First Grade College, Malur	2010
Govt. First Grade College, Bangaru Tirupati	2013
Govt. First Grade College, KGF	2016

Present status of automation

Table II indicates that of the eight libraries surveyed, one indicated that automation implementation is underway but incomplete. All other seven Libraries claim that their automation work is complete.

Category		Number of respondents								
	GFGC, Kolar	GWC, Kolar	GFGC, Mulbagal	GFGC, Bangarpet	GFGC, Srinivaspur	GFGC, Malur	GFGC, Bangaru Tirupathi	GFGC, KGF	Total	
Completed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	5	
Partially completed	-	-	-	-	-	-	-	-	0	
At initial stage	-	-	-	-	-	-	-	Yes	1	

Impact of automation on library services

Table 2: Present status of automation

Table III indicates that five librarians believe automation has helped enhance the efficiency of library services. The three librarians said that automation has had only a slight impact on the efficiency of library services.

Category	Number of Respondents								
	GFGC, Kolar	GWC, Kolar	GFGC, Mulbagal	GFGC, Bangarpet	GFGC, Srinivaspur	GFGC, Malur	GFGC, Bangaru Tirupathi	GFGC, KGF	Total
Slightly improved	-	-	-	-	Yes	Yes	Yes	-	3
Improved	Yes	Yes	Yes	Yes	-	-	-	Yes	5
Deteriorated	-	-	-	-	-	-	-	-	0
Remain same	-	-	-	-	-	-	-	-	0

Table 3: Impact of automation on library services.

Type of library automation software

Table IV reveals that only two libraries surveyed are using open or free software or in-house software

Table 4: Type of library automation software.

for library automation. Remaining six libraries are using various licensed or purchased software for automation work.

Category	Number of Respondents									
	GFGC, Kolar	GWC, Kolar	GFGC, Mulbagal	GFGC, Bangarpet	GFGC, Srinivaspur	GFGC, Malur	GFGC, Bangaru Tirupathi	GFGC, KGF	Total	
Open/free	-	-	-	Yes	-	Yes	-	-	02	
In-house	-	-	-	-	-	-	-	-	0	
Purchased/licensed	Yes	Yes	Yes	-	Yes	-	Yes	Yes	06	

Barriers to automation

Table V reveals that the five libraries are facing the problem of space. There are shortages of staff in

three libraries, and three reports that users lack the necessary knowledge to use the automation. And all eight have experienced no interference and no library faced problems from higher authority.

Table 5: Barriers to automation.

Category	Number of respondents								
	GFGC, Kolar	GWC, Kolar	GFGC, Mulbagal	GFGC, Bangarpet	GFGC, Srinivaspur	GFGC, Malur	GFGC, Bangaru Tirupathi	GFGC, KGF	Total
Insufficient funds	-	-	-	-	-	-	-	-	0
Inadequate staff	Yes	Yes	-	-	-	-	-	Yes	3
Lack of staff coordination and skills	-	-	Yes	-	Yes	Yes	-	-	3
Lacks of used information technology knowledge	-	-	-	-	Yes	Yes	Yes	-	0
Problem from authority	-	-	-	-	-	-	-	-	0
Lack of space	-	-	Yes	Yes	Yes	Yes	Yes	-	5

Status of automation of various sections of the library

Table VI indicates that two of the eight libraries' acquisition sections are fully automated and one is partially automated. Technical sections in four libraries are fully automated and two are partially automated. Circulation sections of two libraries are

fully automated, one is partially automated and the remaining library was in the initial stage of automation. The periodical section of two libraries is fully automated, two are partially complete and the other is in the initial stage of implementation. In the GFGW, Kolar, all sections of the library are automated.
Category	Number of Respondents									
	GFGC, Kolar	GWC, Kolar	GFGC, Mulbagal	GFGC, Bangarpet	GFGC, Srinivaspur	GFGC, Malur	GFGC, Bangaru Tirupathi	GFGC, KGF	Total	
Acquisition	-	-	-	-	Yes	-	-	Yes	2	
Technical	Yes	-	Yes	Yes	-	Yes	-	-	4	
Circulation	-	-	-	-	-	-	-	-	0	
Periodical	-	Yes	-	-	-	-	Yes	-	2	

Table 6: Status of automation of various sections of the library.

User opinion about the library system

Table VII reveals that among 1000 respondents, 658 said they believe that the automated library system

is better than the manual system and 342 favoured the manual system.

Table 7: User opinion about the library system.

Category	Number of Respondents										
	GFGC, Kolar	GWC, Kolar	GFGC, Mulbagal	GFGC, Bangarpet	GFGC, Srinivaspur	GFGC, Malur	GFGC, Bangaru Tirupathi	GFGC, KGF	Total		
Automated	85	95	86	96	54	87	91	64	658		
Manual	15	05	14	14	46	13	08	36	342		
Total	100	100	100	100	100	100	100	100	1000		

Awareness of library services

Table VIII indicates that 669 users were aware of a circulation service and 235 reportedly indicated an awareness of periodical service. There were 284 users who said they were aware of reference service, 493 were aware of OPAC service and 282 users revealed awareness of online journals.

Category	Number of Respondents										
	GFGC, Kolar	GWC, Kolar	GFGC, Mulbagal	GFGC, Bangarpet	GFGC, Srinivaspur	GFGC, Malur	GFGC, Bangaru Tirupathi	GFGC, KGF	Total		
Circulation	86	95	90	87	80	89	76	66	669		
Reference	44	36	46	26	39	34	29	30	284		
Periodical	12	16	29	38	34	39	42	25	235		
Online Journal	36	39	32	29	35	42	43	26	282		
OPAC	80	89	82	75	72	26	30	39	493		

Table 8: Awareness of library services.

Satisfaction with the overall function of management libraries

Table IX revealed that 249 users were partially satisfied with the overall functions of first Grade College libraries, whereas 405 were completely satisfied with the overall functions of first Grade College libraries. 146 users were not satisfied with the overall functioning of first Grade College libraries. The satisfaction level was highest in the GWC, Kolar and lowest in GFGC, Bangarpet.

Table 9: Satisfaction with the overall function of management libraries.

Category	Number of Respondents									
	GFGC, Kolar	GWC, Kolar	GFGC, Mulbagal	GFGC, Bangarpet	GFGC, Srinivaspur	GFGC, Malur	GFGC, Bangaru Tirupathi	GFGC, KGF	Total	
Satisfied	46	65	52	36	49	51	58	48	405	
Partially satisfied	30	28	30	42	26	19	24	50	249	
Not satisfied	24	07	18	22	25	30	18	2	146	

Staff availability

Table X reveals that out of all eight libraries, six were facing a shortage of general staff and two had

Table 10: Staff availability.

sufficient general staff. Six libraries had sufficient specialized staff for automation.

Category		Number of Respondents									
	GFGC, Kolar	GWC, Kolar	GFGC, Mulbagal	GFGC, Bangarpet	GFGC, Srinivaspur	GFGC, Malur	GFGC, Bangaru Tirupathi	GFGC, KGF	Total		
Satisfied		Yes		Yes	-	_	_	_	2		
Not Satisfied	No		No		No	No	No	No	6		

Findings

Based on the analysis of the results of the survey, one can conclude that:

- All the govt. first grade colleges began their automation work in or after 2005 (Table I). In the selected geographical area, automation work was initiated by the Department of Collegiate Education, Bangalore. Taking into account the improvement in quality of library services.
- The study shows that 90 per cent of libraries are completely automated, with the exception of the GFGC, KGF initial stage of automation (Table II). The majority of libraries are completely automated. The main reason behind this seems to be lack of space and staff.
- Of the librarians, 75 per cent believe that automation has improved their library's services (Table III). Automation saved a lot of time per user as well as staff for providing the information. The librarians in the informal interview expressed their views that automation has reduced their work load, saving them time and labour. Users also accepted that automation has improved the quality of library services and saved them time.
- Most of the libraries are using various purchased licensed software for library automation, including services such as Alice for Windows, NETLIB, TechLib7 and TechLib and very few of the libraries use open-soure available in the web (Table IV).
- All eight librarians surveyed expressed a need of greater space, while 50 per cent said they lack adequate funding and need additional staff (Table V).
- Of the surveyed libraries, 75 per cent have fully automated acquisition section, and only 50 per cent have fully automated

technical section (Table VI). This indicates that there may be a lack of skilled staff. Most of the library staff members are older and not technically astute in automation processes.

- Of the surveyed library users, 85 per cent realized that an automated library system is better than the traditional manual system (Table VII). So we can say that automation has helped library users to get the right information at the right time.
- 75 per cent of the users are satisfied with the overall function of government first grade college libraries (Table VIII). Thus, these automated libraries are able to serve users educational needs satisfactorily, and also provide good reference and referral services through cooperative staff members.
- Of the eight libraries, three have a shortage of general staff and three also lack qualified specialized staff to deal with automation (Table IX). These institutions are avoiding hiring qualified staff to save money.
- Two of the librarians are satisfied with the speed and connectivity of Internet services available in their libraries, while six of them are not satisfied (Table X). Internet connectivity can play a major role in providing the right information to the right user.

Because Internet connectivity in the selected geographical area is still in the developing stages, the speed of acquiring information suffers because of the slow Internet connectivity.

Tenability of hypotheses

The tenability of hypotheses can be checked in the light of the above findings.

H₁ Most of the government first grade college libraries of kolar district have automated their services.

The study shows that (Tables I and II) almost all the libraries in the government first grade college libraries of kolar district are fully automated or under the process of automation. Most of the sections of these libraries are automated. Thus, the hypothesis proved to be true.

H₂ Most of the users are satisfied with the services and facilities provided by the government first grade college libraries of kolar district.

The study shows (Table IX) that the majority of respondents are satisfied with the overall functions of government first grade college libraries of kolar district, with only 25 per cent expressing dissatisfaction. The hypothesis, therefore, is true.

SUGGESTIONS

Some suggestions for libraries, based on the study's results, include:

- GFGC, KGF should complete the automation process of their libraries as soon as possible to provide users with a higher quality of service.
- User training / orientation programmes should be generalship methodically to habituate users on the different stamp of up-to-date notice avail and how to put the library resort to optimal use.
- Users should be made more watchful of the novel facilities profitable in the conduct libraries.
- A full count of qualified library personnel should be available to betroth that the recent system service effectively and to stipulate material guidance to users.
- Libraries should immolate Internet office so that users can admittance enlightenment around the beetle.

CONCLUSION

The ponder sought to investigate the appulse of automation on library avail of government first slope college libraries of kolar division by taking try from control first graduate colleges who are prosecute grade succession and by sagamore librarians of eight regulation first rank colleges of kolar circuit.

The contemplation demonstrated how automation of libraries of state first brand colleges are duty in

and stimulate to equal at least the leas requirements requirement to facilitate the users' widespread and involved informational necessarily and claim. Overall, it is a well-established incident that the library and intelligence system is the being of any founded and indispensably to be establish through completely.

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Use of Information Resources and Services in the Veterinary College Libraries of Andhra Pradesh: A study

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Abstract

The present study conducted to "Use of Information Resources and services in the Veterinary College Libraries of Andhra Pradesh: A Study. Information is the essential commodity for studying, teaching, research and extension activities. in this study questionnaire method was adopted to collect the data from the respondents, along with observation and informal interviews. the finding various library resources and services, purpose, frequency of visit the library, time spent, library collection, print and electronic resources and adequacy of library resources. Test like percentage, mean value method were adopted toverify the results. Major finding of the study and suggestions given based on the analysis and interpretation of the study. Some problems were also explored in using resources and services.

Keywords: Academic Libraries; Veterinary Colleges Libraries; Information Resources library services.

INTRODUCTION

Due to fast growth in the amount of contents or we can say that the rapid growth in the amount information in every field of knowledge, it has become very difficult to anyone to decide which piece of information is relevant to their field of interest and have same importance. It is all because

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of rapid innovation in Information Communication Technology and, it incorporation in every walks of human life. Veterinary education is also not exception to this scenario. Today, the information is available in print and as well as in electronic forms, hence, it is required that everyone must be information literate so that required information may be get accessed and used properly. In this contemporary world, information is considered as an essentials commodity a basic resource material for individual development. So in order to be competitive enough over others, information is playing vital role. According to Shera, information is that, "Which is transmitted by the act or process of communication, it may be a message, a signal, a stimulus, it assumes a response in the receiving organism and therefore, possess response potential, its motivation is inherently utilitarian, it is instrumental and it usually is communicated in an organized or formalized pattern, mainly because such formalization increases potential utility."

In the past, students and academician depended

on printed sources but now them using both print and electronic resources. The way people have been using internet was changed the way to access and use information which has taken a quantum leap in the current scenario. Hence the student and academicians must be proficient with the prevalent technology and online communications that are crucial based on the methodologists for conducting proof-based research in all fields.

The veterinary colleges are play vital role in education system. They act as an information resources Centre that supplements study, teaching and research and extension activities of the parent institution. veterinary science is multidisplinary subject, the library is expected to acquire, organize, store, retrieve and disseminate information not only on the specific subject, but also in current direction of technological advancement.

Unprecedented growth and diversification of information's a problem in veterinary and animal science also. The complexity in information explosion, and globalization necessitates reorganizing and repackaging of the information according to the needs of veterinarians.

VETERINARY EDUCATION IN INDIA

Veterinary education is as old as human civilized and developed in India as early as VedicPeriod. In order to train personnel in modern veterinary and animal husbandry practice. The first veterinary institute began in 1862 with the establishment of an Army Veterinary School at Poona. Chennai (1932) Hyderabad (1946).

Andhra Pradesh: The establishment of three Veterinary Colleges, the first at Rajendranagar during 1946, the second at Bapatla during 1955 and the third at Gannavaram during 1998, paved the way for strengthening Veterinary education in the State. The Veterinary College at Bapatla was shifted to Tirupati during December 1957. The College of Fishery Science was started at Muthukur, Nellore Dt. during 1991. The College of Veterinary Science, Tirupati celebrated Golden Jubilee Year during July 2004 to July 2005 and the year-long Golden Jubilee Celebrations of the College were officially inaugurated by the Hon'ble Chief Minister of Andhra Pradesh, Dr. Y.S. Rajasekhara Reddy on 30th September 2004.

The Veterinary Council of India

The Veterinary Council of India is a statutory body of the Government of India framed under an Act of Parliament I.e. Indian Veterinary Council Act, 1984 (52 of 1984). This is an Act to regulate Veterinary practice and Veterinary education. The Act stands extended to all the States of India. Only those who possess recognized veterinary qualification and registered can practice in the country. Since its inception the VCI has been taking active steps in revising the curriculum in collaboration with the ICAR and its adoption by the universities. This council advises the Central and State Government on all the matters related to veterinary education and practice

ROLE OF LIBRARIES AND VETERINARY EDUCATION

Agricultural research, the backbone of agricultural the country, demands growth in timely dissemination of knowledge being generated and updated across the globe from time to time. With the advent of internet facilities and advancement of web technology, almost all reputed international journals are available online and can easily be accessed by researchers over the network. Since ICAR is having network connectivity across the institutes and state agricultural universities, select journals could be made available over the network for the use of scientific community. Keeping this broad objective in mind, the NAIP has established the Consortium for e-Resources in Agriculture (CeRA) at the Indian Agricultural Research Institute (IARI). Libraries are providing strong support to achieve the goals of veterinary system through ensuring quality based services to the students, faculty and staff. Libraries are deeply committed to update the collections continuously in order to reinforce and enrich the knowledge base for assisting the institutions to achieve excellence in academic, research and development and continuing veterinary education activities. Veterinary Librarians should employ new information technologies and new approaches to better serve their users in new ways of acquiring information. These libraries should organize their services so that they bring their information resources closer to the busy veterinary practices.

REVIEW OF LITERATURE

Bindu and chandrappa (2012) conducted a study on " use of information resources and services in the veterinary college libraries : A Study" this study aimed at identifying various library resources and services available in the veterinary college libraries. Tests like percentage, weighted mean value are method were adopted to verify results. Velmurugan and Thavamani (2013) the study aimed to find out the awareness and usage pattern of library resources and services by the students of Rajalakshmi Institute of Technology College. The study involved questionnaire method to collect the primary data and analyzed and tabulated by using statistical methods. The major findings were that the library automation must be maintained properly. More effective technical staff should be appointed and they should be present in the internet section for expert advice. HemanthaKumar (2017). Conducted a study on "Information seeking behavior of faculty members of Agricultural Universities in Karnataka: A Studyreview" The study includes information pertaining the research methodology, to population, sample, data collection and analysis. A comprehensive review of literature covering the period 2016 - 2004. Survey method will be employed to study of Information Seeking Behavior of Faculty Members of Agricultural Universities in Karnataka. Questionnaire will be framed to collect the feedback from faculty members to meet the objectives of this study. Data collected will be subjected for statistical analysis to prove objectives and hypothesis. This article reviews the literature on the information seeking behavior. The literature includes journal articles, reports, monographs etc., published inside and outside India, discussing about Information Seeking Behavior, Agricultural University Libraries, Agricultural Scientists, Crops Research Scientists, Farmers in India, Public Libraries in Karnataka, ICT Environment and the problems faced by the users. Mujumdar and Mujumdar (2014) conducted a study on "Access of Electronic Resources in Engineering college libraries of Assam: An Empirical analysis" the main focus of this study is to analyses and evaluate the use of e-resources by the engineering college libraries of Assam. It covers different types academic users including faculty members, students and research scholars. The survey was conducted with structured questionnaire followed by interview as and where it was necessary. Major finding of the study usage of various e- resources in the engineering college libraries of Assam it also reveals that users are using many types of e-resources. Some problems were also explained in using e-resources. The majority of users are satisfied with e-resources. The study was an attempt to evaluate the use of e-resources by users of engineering college of Assam. Results from the study are encouraging and it is hoped that the findings will provide meaning and a useful platform for further research as well s usability among engineering academics will also be improved. GaniyuIdownBuhari (2016) observed that library information resources and services used

were good predictions of creativity of the library users. The study concluded that library as the store house of information must also be properly funded to attain more adequate facilities such as power supply, affluent information and communication technologies, maintenance of culture activities and bandwidth of internet access.

OBJECTIVES

- 1. To know the information resources and services among the respondents
- 2. To know the availability of the print and electronic resources and services
- 3. To know adequacy of information resources
- 4. To understand the opinion of the respondents towards different resources in the library
- 5. To study the awareness and experience in using information resources and services by the respondents of veterinary college libraries.
- 6. To assess the opinion of the respondents towards the library staff.

SCOPE AND LIMITATION OF THE STUDY

The present study is confirmed to theUse of information resources and services in the Veterinary college libraries of Andhra Pradesh: A StudyThere are four veterinary colleges in Andhra Pradesh. Each of these institutes has libraries to cater the needs of their academic community, keeping the view of enormity of the study, the scope and limitation of the study covered only those colleges offering Under Graduate, Post Graduate, and Ph. D courses.

Table 1: Veterinary Collages of Andhra Pradesh.

Name of the college	Year of establishment	Courses offered
Sri Venkatesware Veterinary University- Tirupati	1955	UG, PG, Ph.D
College of veterinary science-Gannavaram	1998	UG, PG
College of veterinary science-proddutur	1998	UG
College of veterinary science-Garividi	2019	UG
College of fishery science-Muttukur	1992	UG

METHODOLOGY

The present study was conducted by collection

of data through structured questionnaire and personally visit to these colleges. The questionnaire was administrated using a simple random sampling technique. A total number of 140 questionnaires were administered among the users of the veterinary colleges under the study of 122 questionnaires were received back with response rate 87.1%. The date collected was tabulated and analyzed. Statistical techniques of mean value and percentage method were mainly used to analyze the collective data. Five-point scale and Three-point scale was adopted where is necessary to get the mean and rank order.

Table 2: Gender Wise Distribution of Questionnaires.

Gender	No. of respondents	Percentage		
Male	58	47.5		
Female	64	52.5		
Total	122	100		

Table 2 shows that majority respondents are female (52.5%) as compared to male respondents (47.5%).

Table 3: Frequency of visit to the Library.

Frequency	No. of Respondents n= 122	Percentage
Daily	64	52.5
Twice in a week	36	29.5
Fortnightly	11	9.0
Once in a month	9	7.4
Never	2	1.6
Total	122	100

It is evident from table 3 that majority of the users visited the library daily (52.5%), 29.5% of the users visited the library twice in a week. 9.0% of the users visited the library fortnightly, and a few of the users visited the library (1.6%).

Table 4: Time Spent on reading Information Sources per day(N=122)

Hours	No of Respondents N=122	Percentage
1-2 hours	27	22.13
2-3 hours	65	53.27
3-4 hours	11	9.01
4-5 hours	10	8.19
More than 5 hours	8	6.56
Total	122	100.00

Table 4 shows that more than half of the respondents (53.27%) spent 2-3 days per day on reading information sources and then followed by (22.13%) of them 1-2 hours per day, and followed by the respondents (9.01%) for 3-4 hours. However, a very few respondents spend more than 5 hours

per day on reading information sources.

Table 5: Purpose of visit to the library (N - 122)

Purpose	No of respondents N=122	Percentage		
To Preparing class notes	45	36.9		
To update knowledge	65	53.3		
To borrow books	40	32.8		
To browse e- resources	55	45.1		
To consult reference services	20	16.4		
To use internet	52	42.6		
Preparing class notes	47	38.5		
To research work	35	28.7		

From the table 5 it has been revealed that 65 (53.3%) of the respondents used the library resources for 'to update knowledge. 55 (45.1%) of them to browse e-resources, 52 (42.6%) of them to use internet, 47 (38.5%) of them used to preparing class notes 40 (32.6% of the respondents visited the library to borrow the books. It is inferred from the above facts, that there is a significant use of library resources to update knowledge and browse e-resources.

Table 6: Opinion about Availability of Library Collection.

Collection	Go	ood	Ave	erage	ge Poor			
-	No	%	No	%	No	%		
Books	56	45.9	45	36.9	21	17.2		
Journals	45	36.9	59	48.4	18	14.8		
e-journals	48	39.2	54	44.3	31	25.4		
Veterinary databases	38	31.1	54	44.3	30	24.6		
News papers	51	41.8	38	31.1	33	27.0		
software	24	19.7	36	29.5	62	50.8		
e- theses and dissertations	23	18.9	32	26.2	67	54.9		
Audio & video materials	44	36.1	52	42.6	26	21.3		
Previous question papers	49	40.2	51	41.8	22	18.0		

table 6 shows that majority of the respondents' opinion about 'good' collection of books available 56 (45.9%)followed by newspapers 51 (41.8%), 40.2% of them opinion about good collection previous question papers, followed by e-journals (48), journals (45), and veterinary data bases (38) of the respondents about the opinion with 39.2%, 36.9% and 31.1% respectively. Whereas most of the respondent'sopinion about average collection of journals (59), e-journals (54) audio and video materials (52) and previous question

paperswith 48.4%,44.3%, and 41.8% respectively. And finally most of the respondents' opinion about 'poor, collection of e- theses and dissertations. opinion about good in library collection Books, journals, newspapers previous question papers use of library resources are books, and journals due to available sources in the library.

It can be inferred that most of the respondents'

Table 7: Use of print version of information to support to academic and research activities (N=122)

Source	Most useful		Useful		Moderately Useful		Not at all useful		Can't say		WM	Rank
-	No	%	No	%	No	%	No	%	No	%		
Books	49	40.1	30	24.5	21	17.2	12	9.8	10	8.1	3.8	1
Journals	45	36.8	32	26.2	17	13.9	16	13.1	12	9.8	3.7	2
Dictionaries	24	19.6	35	28.6	46	37.7	10	8.1	7	5.7	3.5	3
Encyclopedias	19	15.5	25	20.5	28	22.9	18	14.7	32	26.2	2.8	4
Theses	12	9.8	25	20.5	21	17.2	38	31.1	36	29.5	2.7	5

Note: number of respondents is (n=122) weighted mean is calculated on a 5-point scale with weight assigned as follows Most Useful=5, Useful=4, Moderately Useful=3, Not at all Useful=2, and Can't say=1

Table 7 shows that the rating for each print version of library resources under consideration is measured based on five-point scale, Viz. most useful, useful, moderately useful, not at all use full and can't say for each scored have been assigned as 5,4,3,2, and 1 respectively and the weighted mean scores have been computed, for which ranks have been allotted. From these ranks, it can be clearly observed that 'Books' occupied 1st rank in terms of use of print sources by the respondents followed by journals, dictionaries, encyclopedias and theses with 2nd, 3rd, 4th, and 5th ranks respectively.

It can be inferred that most use of library resources are books, and journals due to available sources in the library.

Table 8: Us	e of electron	ic version c	of information	resources	to support	to academic	and research	h activities]	N=122

Source	Source Most useful		Useful		Moderately useful		Not at all useful		Can't say		WM	Rank
_	No	%	No	%	No	%	No	%	No	%	No	%
e-journals	53	43.4	27	22.1	22	18.0	12	9.6	8	6.5	3.9	1
e-books	28	22.9	28	22.9	23	18.8	15	12.2	15	12.2	3.2	6
Veterinary databases	36	29.5	34	27.8	23	18.8	18	14.7	14	11.4	3.6	4
OPAC	48	39.3	33	27.0	17	13.9	15	12.3	9	7.4	3.87	2
E-dissertations and these	25	20.5	28	23.0	34	27.9	19	15.6	16	13.1	3.4	5
Online resources	46	37.7	30	24.6	25	20.4	12	9.8	9	7.4	3.8	3

Note: number of respondents is (n=122) weighted mean is calculated on a 5-point scale with weight assigned as follows Most Useful=5, Useful=4, Moderately Useful=3, Not at all Useful=2, and Can't say=1

Table 8 shows that the rating for each electronic version of library resources under consideration is measured based on five-point scale, Viz. most useful, useful, moderately useful, not at all use full and can't say for each scored have been assigned as 6,5,4,3,2, and 1 respectively and the weighted mean

scores have been computed, for which ranks have been allotted. From these ranks, it can be clearly observed that 'e-journals' occupied 1st rank in terms of use of electronic sources by the respondents followed by OPAC, online resources veterinary databases, e-theses and dissertations, e-books with 2nd, 3rd, 4th, 5th and 6th ranks respectively.

It can be inferred that most use of library resources are e-journals, OPAC and e-resources, and journals due to available sources in the library.

Source	Most useful		Us	eful	Moderately useful		Not at all useful		Can't say		WM	Rank
-	No	%	No	%	No	%	No	%	No	%	No	%
circulation	51	41.8	38	31.2	18	14.8	10	8.1	5	4.1	3.98	1
Reference service	24	19.6	48	39.4	21	17.2	17	14.0	12	9.8	3.6	4
Internet	55	45.0	31	25.4	22	18.1	8	6.5	6	5.0	3.9	2
Current awareness service	23	18.8	42	34.4	35	28.6	13	10.6	9	7.3	3.46	5
Photocopying	39	32.0	50	40.9	18	14.7	10	8.1	5	4.1	3.8	3
Inter library loan	23	18.9	45	36.9	29	23.7	14	11.4	11	9.1	3.4	6
Information literacy/ orientation	23	18.8	45	36.9	28	22.9	14	11.4	12	9.8	3.5	7
Referral service	21	17.2	27	22.1	24	19.6	29	23.7	21	17.2	2.9	8

 Table 9: Usefulness of library services

Note: number of respondents is (n=122) weighted mean is calculated on a 5-point scale with weight assigned as follows Most Useful=5, Useful=4, Moderately Useful=3, Not at all Useful=2, and Can't say=1

Library is a service oriented institution and provides services to its clienteles. Library services are varying from library to library but in the veterinary college libraries under study provide same services to their users.

Table 9 shows that the rating for each service of library under consideration is measured based on five-point scale, Viz. most useful, useful, moderately useful, not at all use full and can't say for each scored have been assigned as 5, 4, 3, 2, and 1 respectively and the weighted mean scores have been computed, for which ranks have been allotted. From these ranks, it can be clearly observed that 'circulation occupied 1st rank in terms of providing library service by the respondents followed by internet, photocopying, reference current awareness service andinter library loans with 2nd, 3rd, 4th, 5th and 6th ranks respectively.

It can be inferred that majority of therespondents are using library services like circulation internet, photocopying, reference current awareness service and inter library loans in the library.

Table 10: Problems faced in the using library resources and services

Problems	Ag	ree	Neither agree	Disagree		
	No	%	No	%	No	%
Lack of time	60	49.2	38	31.2	24	19.6
Not properly arrangement books on shelves	45	36.9	56	45.9	11	9.0
Lack of supporting the staff	23	18.9	29	23.7	70	57.4
Lack of proper lighting and ventilation	70	57.4	25	20.5	27	22.1
Lack awareness various sources and services in the library	56	45.9	34	27.7	32	26.2
Insufficient internet band with	76	62.3	25	20.5	21	17.2
Library timings are inadequate	72	59.0	28	22.9	22	18.0

Table 10 shows that majority of the respondents (76) indicate the problem are agree insufficient internet bandwidth with 62.3% on the other hand library timings are inadequate with 59% and followed by 57% of them lack of proper lightings and ventilation and lack of time (60), 49.2%, lack of awareness various sources and services in the library (56), 45.9% not properly arrangement of books on shelves is hardly encountered using the library resources and services in veterinary college libraries.

Table 11: Opinion about the Library Staff withrespondents

Opinion	No of respondents	Percentage
Good	62	50.9
Average	48	39.3
Poor	12	9.8
Total	122	100.0

Table 11 shows that more than half of the respondents (62) opined that of library staff was 'Good' (50.9%), and 48 respondents (39.3%) opinion was 'Average'. Only 12 respondents (9.8%) was says that their opinion of the staff was 'Poor'.

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Source		Adequacies of information resources (n=122)								
	5	4	3	2	1	WM	Ranks			
Books, journals and reports	55	30	15	12	10	3.9	1			
e-resources	36	48	19	10	8	3.7	3			
Services	45	37	21	10	9	3.8	2			
Cooperation of library staff	55	28	15	19	5	3.5	4			

Table 12: Adequacies of information resources and services N-122

(Note: 5=Very good 4=good 3=moderately good 2= poor 1= very poor)

To ascertain the various demands of the users, it is essential to consider that the information resources provided are adequate to meet the information requirement of its user.

Table 12 shows that respondents of veterinary college libraries given ranks in terms of adequacies of library resources and services like books, journals and reports 1st rank, and library services 2nd rank, e-resources 3rdrank with mean value of 3.7 and cooperation of library staff 4th rank with mean value of 3.5. it is evident from the above table that veterinary college libraries of Andhra Pradesh have very good collection of books, journals, reports. It can be inferred that users satisfied with the library resources and services

FINDINGS

- More than half of the (53.3%) of the respondents visit the library for the to 'to update knowledge 45.1% of them to 'browse the e-resources and whereas 42.6% 'To use the internet.
- Majority of the respondent (45.9%) opined that of the 'Books as most available print resource in the library, followed 418% of the respondents opined that 'veterinary databases' are available resources in the library
- Majority of the respondents (WM=3.8)', (1st rank) frequently used print sources like 'Books', followed by 'journals (WM=3.7), (2nd rank).
- Majority of the respondents (WM=3.9)', (1st rank) frequently used Electronic sources like 'E-Journals', followed by 'OPAC' (WM=3.87), (2nd rank).
- Slightly more than half of the (50.9%) respondents' good opinion about library staff

SUGGESTIONS

- The study shows that majority of the respondents (46.7%) were not spending much time in the library per day (vide table 4). Hence administration and library professionals must take steps to improve attending users to library through library orientation Programme
- Based on the findings of the study, significant number of users are aware of the existence of print electronic information resources. Libraries are organizing library orientation\ information literacy Programme to make use of the information resources available in the library.
- Majority of respondents stated that library staff is co-operative and they should assist in searching the required information. It is suggested to increase the number of staff and training must be given existing staff in current development.
- More funds to be allotted to acquire print and e-resources.

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Promoting Usage of the Academic Library during COVID-19 Pandemic

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Abstract

Young generation scholars rely more and more on Google and other web services for discovery and access. Sometimes libraries are not sure whether their information services and well organized collections are being utilized properly or not. This paper highlights the changing attitude of users in the digital environment and use of effective tools and techniques by Academic libraries for providing innovative library services to meet the changing user attitude. This paper also suggests ways and means for making innovation in providing resources and services to the users. It also explains the usage of web tools for effective promotion and marketing of library services to attract users to use the academic Library. At the same time this paper also explains the specific services and roles must be played by Library and Information Science Professionals (LIS) during COVID-19. We know that necessity is the mother of invention and we have realized it during the pandemic situation. Access to information is vital part for ensuring the quality of education. Adaptability is very essential in this sudden change because of COVID-19. So, libraries in general and academic libraries in particular must take specific measures to address this situation. This paper has explored various adaptive measures taken by libraries and LIS professionals in response to COVID-19 in different countries. Based on that few adaptive measures to adapt during COVID-19 has been recommended for academic libraries in the developing countries in general and for academic libraries of India in particular.

Keywords: Innovative library services; Academic Library; COVID-19; Web 2.0 tools; Social networking; Faculty-Librarian Collaboration.

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INTRODUCTION AND BACKGROUND OF THE STUDY

The users at academic institution have many options to retrieve information from the web, and they simply consider physical and digital libraries as one among many other sources of information. Even they don't consider Library resources as first or second choices among the academic communities. They find the open access resources as more suitable and easier to use. Hence the experts at the library need to use more effective tools to tackle the current transfer from the traditional system in libraries and academics. To tackle the current circumstances the library must provide innovative services around user's activity area and facilitate them to manage the trouble in handling the massively rich resources.

Library professionals desire the best for their users, and it is wearisome when the reality does not match up to the expectations. Things will not happen only by the desire but it needs efforts to fulfill the desire. Despite budgetary constraints libraries can innovate in the most attractive ways in order to fulfill their desire and create innovative services for their users. Innovation is not a destination to reach rather making innovation is a continuous process. Innovation requires to be methodically embedded in us.

There is a change in the regular practices and services provided by academic libraries during the COVID-19 pandemic when the physical classes were stopped and online classes were started. The academic libraries specifically in the developing countries face a number of technical and financial challenges. Making off-campus access to subscription based resources, Lots of digital initiatives, measures to bridge digital divide among user community etc. needs lots of financial assistance. Low bandwidth, slow internet connectivity in villages affects the capacity of learners to access online tutorials and classes taken by teachers and information bearing resources delivered to the students.

The LIS professional in the developed countries responded smartly to the COVID-19 emergency and started to collaborate with teachers for online education and took immediate measures for getting connected with teachers and learners. However, libraries in developing countries lack facilities, resources, and ICT (information and Communication Technology) to operate in the prevailing condition. Thus, there are many challenges for academic libraries in fulfilling the needs of the users.

Open access resources are very useful for the academic communities during emergency. Open educational resources on Web, Off-campus access of electronic resources, theses and books repositories, and electronic document delivery services etc. are the key source for academic communities in the developing countries like India during the COVID19 lockdown.

ROLE OF COLLABORATION IN MAKING INNOVATIONS IN LIBRARIES

Merriam Webster Dictionary (2014), defines innovation is "The act or process of introducing new ideas, devices, or methods". Libraries must use an extensive variety of tools and techniques in providing different services to the users. Very few users at current academic environment prefer to visit a library and talking front to front with a librarian or expert, majority of users prefer to communicate virtually. Whereas huge number of users prefers to have access to electronic resources on their own desktop and they expect library on their own desktop. In this situation it is difficult to make available everything to every user. Few users want to read a book by holding in the hand, some other want electronic access and it is very difficult to provide everything to everybody. Collaboration is a great solution to this problem. Library's services can be broadening by the help of collaboration.

Librarians at academic institution must work together with faculty to incorporate library resources into the teaching learning environments. Information literacy instruction must be provided when there is a need, i.e., for some projects and assignments; "work with scholars to provide access to their data sets, project notes, papers, etc. in virtual research environments and digital repositories; collaborate with information technology experts to develop online tutorials and user-friendly interfaces to local digital collections; collaborate with student support services to provide integrated services to students; and collaborate with librarians at other institutions to improve open source software, share resources, purchase materials, and preserve collections." (Corrall, S. 2012)

USAGE OF TOOLS AND TECHNOLOGIES FOR MAKING INNOVATIONS

Discovery tools, Cloud computing, open source software, open content, social networking tools etc. must be used by the libraries for providing effective service to the users. Single interface must be provided to access the multiple resources subscribed by the institution using a centralized consolidated index that enable faster and enhanced search results. Lots of innovation can be made in academic institutions by using of web2.0 in providing library services; communicating with library users and making the usage of web 2.0 tools in teaching learning process.

Since the library is the hub for learning in an academic institution, central library of each university should play an important role as a community centre for promoting the use of Web 2.0 tools in learning among the students. Web 2.0 tools are having lots of implication for providing library services to the users. Hence, the usage of Web2.0 by libraries for interacting with users and providing information services to the users leads to two fold benefits. It will promote usage of library services with a dynamic library portal with high degree of user interaction.

Library displays the newly purchased reading materials for the readers. The purpose is to inform the readers about new arrival document list to the users. This display can be done by posting the list of reading materials in the library web site as well as in social media site, which is the most visited media among the users. Library provides the reference service to all its readers that may be the long-term and short term service. The service can be provided promptly by using the web tools. Many libraries in the world providing virtual reference service on web named as "Ask a Librarian".

Scanning, classifying and organizing the daily use full news for the readers is a significant service provided by the library called news paper clippings which provides the latest and current information. It is the Current Awareness Service, which keeps the users up-to-date of current developments. This service can be provided promptly by using the digital media which can be called as digitized news -paper clipping service.

Lot of innovation can also be made by the libraries using web2.0 in teaching-learning process. The tools of Web2.0 can provide a collaborative learning space for all the students of the university and to serve as a knowledge management system. However, right Web2.0 tool must be selected by the librarian for the learning communities according to their learning objective. Again each Web2.0 tool (Blog, Wiki, Document sharing etc) are having lot of online platforms, so right platform may be chosen having all the better features for learning. A specific platform under a Web2.0 tool may have features and facilities which may be more helpful for students belonging to particular subject or department. For example, under document sharing, 'Google Docs' is more useful for the students of social science than science and technology, as it is having the facilities of creating form, collecting responses for a survey and doing analysis of the collected responses along with other features similar to other document sharing platforms. Usually students of social science need to conduct survey work more than other disciplines do. In the following table list of Web2.0 tools which best fit to specific learning activities have been proposed.

Learning activities/ objectives	Tools best fit with the objective
Discussion with teachers and fellow students for exchanging ideas	Blog
Creation of FAQ on specific topics, Organizing course materials, Group Assignment	Wiki
Collaborative writing, Upload and sharing document	Document sharing
Retrieving, classifying, storing, sharing relevant course materials on web.	Social Bookmarking
Making instructional videos, subscribing relevant videos for learning, Uploading & sharing videos	Video sharing
Sharing research ideas and research results among peers	ResearchGate
Networking and communication	Social networking

SCHOLARLY COMMUNICATION AND COPYRIGHT

Scholars at academic institution are not much aware about copyright and the issues of copyright. Academic libraries must put efforts to build up scholarly communication and copyright. Academic libraries must make the academic communities aware about the significance of scholarly communication and copyright issues. Proactive efforts must be from libraries to educate students and faculty about authors' rights and different publishing options under open access. Rising use of open resources, creation of local digital collections, complexity of licensing issues, restriction in using e-resources and course management systems, emphasize the necessity for academic libraries to make the availability of intellectual property services.

Following table lists the effective products as well as process or techniques for making innovation in libraries.

Innovation in	n Products	and Processes
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Product	Process
Institutional repository	Faculty Librarian Collaboration
Faceted browsing in OPACs	Cooperative preservation
Shared digital repository	Creating new library services
Archiving research data	Virtual reference desk
online tutorials	Assisting in Research
Popular electronic resources	Management of Bibliographic data of Researchers
easy to use interfaces to digital collections	Streaming video to classrooms
	Prompt dissemination of current Information
	Information literacy instruction
	Making virtual research environments

MARKETING AND PROMOTION OF LIBRARY SERVICES

In this information society, academic libraries are facing a lot of challenges such as: financial crunch, emergence of new information technologies, changing user needs, and changing need for research and teaching. Users are more attracted towards open web rather than towards visiting the library. Even the users at academic institutions are not aware about the efficiency of the libraries and library professionals in assisting them in their teaching learning process as well as in research. Effective promotion and marketing is the real solution to face these challenges now and in the future also.

Librarians can use a group of web tools such as blogs, tools for media-sharing such as Flicker, YouTube, tools for networking with people such as Facebook etc. to market their services and products with lot of success. Information professionals can also use tools such as RSS (Really Simple Syndication), tagging etc. as a means of marketing and promotion of library resources. YouTube can be successfully used to market the library's collection and services. Photo sharing website Flickr allows libraries to post photographs, store photographs, sort and search them. In addition to posting information products for promotion purposes, library professionals can post photographs of the library, different sections of the library and staff to give a virtual tour of their users. Social networking tools like twitter, facebook etc. are becoming increasingly accepted, to showcase forthcoming events and hence libraries must take all the benefit out of this. Many papers have explored how Twitter is useful in libraries for market the services and products.(Fields, 2010; Stuart 2010).

INTERNET IS NOT A SUBSTITUTE FOR LIBRARY

Plenty of substantial materials on the Internet are not for free. For example, "only about 8% of all journals are on the web, and an even smaller fraction of books are there". (Herring, 2010) Internet is just like a vast unorganized library having scholarly as well as huge mass of unpublished literature. Users may use Google or any other search engines or Meta search engines to retrieve documents from web but the entire web can't be searched. Again there is no quality control on the web; anyone can create whatever content they want.

Libraries contain reading material that has been published after a thorough peer review process. Libraries also acquire varieties of database and journal that are not available through the web, or are not available freely. Libraries acquire information products that are most believable on different subjects and therefore can be trusted, but on the internet, anybody can publish anything. Librarians are having the capability to educate the users how to be smart consumers of information resources, i.e. how to evaluate information in any formats or media.

ROLE OF LIS PROFESSIONALS IN RESPONSE TO COVID19

During the COVID-19 pandemic condition, when information outburst is enormous, it is the right time to tell again to the society that the significance of libraries and the role of librarians in identifying, organizing and disseminating the accurate information at right time. Precise and correct information is the key to manage the chaotic situation. Common people are the sufferer of this 'information overload'. Globally, there is fear caused by the over-consumption of incorrect information. There are many reasons for information outbreak like creation and dissemination of false information in social media. Most people rely on Google and social media to access and share information. It is a quick and easy way to share information with the masses, by using Social Media but authenticity of most of the information is unchecked and is blindly 'forwarded' to others. These 'forwards' lead to an enormous flow in the number of 'fake' messages and rumors about corona virus, which misleads people. This can be disastrous in this crisis and may even put a person's health at risk. It has created a situation of 'infodemic' as declared by the Director-General of the World Health Organization (WHO). This has severely affected research work and has also created chaos among the laypeople.

Libraries and Information institutes must come forward in such a crisis situation to play an essential role in making people aware about authentic source of information. The official page of the government of India, supplied all information on COVID-19 and required guidelines. To check this pandemic government initiated various programs and also developed Aarogya Setu mobile application to communicate required health information regarding containment of COVID10, best practices, risks etc.(https://www.india.gov.in/). Libraries can make information literacy sessions to educate people regarding those initiatives and to prepare the nation to fight against infodemic (spread of fake or misinformation)

The Library and Information Research Institute at Mexico, conducted webinars on misinformation, information overload, COVID 19 and open access and has been creating a list of open access resources on the topic.

Library can also create leaflets presenting the steps to identify and mark false news in various Medias. One of the example is presented like below.

HOW DO I MARK A FACEBOOK POST AS FALSE NEWS?

To mark a post as false news:

- 1. Click next to the post you'd like to mark as false.
- 2. Click Find support or report post.
- 3. Click False News, then click Next.
- 4. Click Done.

When visit to the academic institution is restricted for the learners and researchers, it is highly essential to have abundance of quality information sources for their learning and research work. Library and Information Science (LIS) professionals must help the user communities for identifying authentic information and libraries must reach them virtually for providing resources and services as fast as possible. Academic Libraries can also request the publishers to open their resources publicly for a few months as all libraries do not have the remote access facility. Many publishers (Springer, Nature, IEEE, etc.) have already provided remote access to their users

Again the learning and research communities must have knowledge to carry out their learning and research using the online platform.

"Many university libraries are providing training on information literacy in order to help the researchers to carry out their research online. Libraries in Loveland and Colorado in the U.S are also offering online courses in information literacy during the pandemic" (https://www.ifla.org/)

Libraries in Malaysia are also active in making awareness of the activity of libraries in combatting fake news, and also many libraries carried out studies on information seeking behavior of the user communities during pandemic. IFLA"(https:// www.ifla.org/)

As reviewed from various studies, it was found that open access resources were useful for the academic communities during emergency. Open educational resources on Web, Off-campus access of electronic resources, theses and books repositories, and electronic document delivery services etc. are the key source for academic communities during COVID19 lockdown.

As Off-campus access of electronic resources is highly essential for the user community, INFLIBNET Access Management Federation (INFED) adopted Shibboleth (Open Source software) software, for authenticating permitted users from universities and colleges. "The INFED is being set-up as a centralized agency to coordinate with member institutions of E-sodhsindhu consortium in the process of implementation of user authentication and access control mechanism distributed across participating institutions using standardized rules and metadata for exchange of attributes." (http:// infed.inflibnet.ac.in/).

Those libraries having both print and electronic collections responded well during COVID-19 crisis.

Academic libraries found that lack of ICT literacy skills, digital divide, and slow internet connectivity were the major hindrances in academic communities' move from physical to online mode

and witnessed a scanty use of library's online services and resources. The study made following recommendations for the enhancement of services in such situations.

RECOMMENDATIONS

e. The governments of India and other developing countries of the world have to increase the budget for libraries in order to enhance the e-resources and e-services and prioritize the digital change in the societies. Libraries must spend for getting new infrastructure, technology systems, and staff training, so that they can serve their user communities in emerging digital environments. Libraries need to renegotiate with their e-resources suppliers for the subscription licenses and must ask for remote access as students are off the campus.

- f. The governments should take initiatives for bridging the digital divide among the cities and villages. Off-campus access to e-resources is highly essential as majority of academic institutions in India allow students for physical classes only for few months before examination. Hence students remain off-campus for maximum duration.
- g. Libraries must act proactively for improving the digital literacy of the users. Libraries must collaborate with teaching communities, in handling Learning Management system, creating video tutorials etc.

Following table presents difficulties faced by academic communities during COVID-19 and the possible solution for that.

Difficulties during Global COVID-19 Pandemic	Library Services
1. Many libraries across the globe closed their physical buildings for users, Library was only open for staffs.	1. Usage of electronic resources and online databases has increased. Access to Digital Libraries and Institutional repositories also increased.
 Difficulties in moving from Physical to Digital Digital Divide among user communities. Technology Barrier Unskilled library Staff 	2. a. Government initiatives to Bridge the digital divide by developing necessary infrastructure,b. Awareness Programmes by libraries to enhance digital Literacy skill of the user community.c. Staff training to develop skilled library staff.
3. Budget Constraint	3 Increase budget for the library; Promoting usage of Open source software; promoting usage of open access resources among user community are few steps to the budgetary Constraints in the library.
4. Flow in the number of 'fake' messages or flow of Misinformation in social media.	4 Awareness Programmes by library to identify and mark fake information

The contribution of the librarian is remarkable; in the various studies, we have found a librarian plays a vital role in all circumstances, and they are always ready to help the society.

CONCLUSION

The concept of the library is changing gradually as virtual space is expanding and physical items in many libraries are declining. The majority of academic libraries provide access to more e-resources than physical items. Users prefer to visit the library resources through their own desktop or smart phone rather than visiting physically to the libraries. Hence the academic libraries must go ahead with the more and more development of ICT enabled library services. The primary aim of providing innovative library service is to provide the services in such away that the users can get utmost satisfaction and they will be attracted to visit the library web pagerather than visiting Google regularly for their course materials. In this modern era giving innovative services is more essential than frequent advertisements. The users are more attracted and satisfied by innovative services rather than advertisements. There is a saying "customers create customers" likewise the Innovative library services can help in increasing the flow of users to the libraries rather than to the Google and hence the users can save themselves from the confusing navigation at Google or any other search engines.

Many academic institutions in India started to resume physical classes from the month of January 2021, only for the final year students. But as it is observed in Odisha, most of the parents are afraid about COVID19 and they are not allowing their children for physical classes. Hence, libraries should follow the new normal and must be prepare for new normal. Along with enhancing digital/online services Libraries have to reorganize the seating plan in the reading room, ensuring the sanitization of reading material and library furniture and must ensure to maintain social distancing etc. to adapt during COVID19 pandemic.

Libraries should promote the academic communities for use of open access resources and open science. Libraries must organizevarious awareness programs by collaborating with teaching communities. They should also collaborate with them for developing tutorials and course contents.

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ICT Skills Required for Librarians in Digital Era: An Overview

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Abstract

The rapid development of information technology is bringing about unpredictable changes in the field of library and information management. The leap from conventional library management system to electronic library management has paved way for great changes in the very structure and manner of library profession. The paper discusses the essential technology tools and techniques a library professional should possess in order to manage the academic libraries and the millions of information coming out day by day in this digital era. The paper points out the knowledge and skill a library professional should acquire for the successful application of information technology in libraries.

Keywords: ICT skills; Library professionals; Digital Library.

INTRODUCTION

In the early seventies library automation processes were started to automate and smoothen the flow of the library services. In the late nineties, Internet changed this automation process with the emergence of web based services. In the last 8-10 years, the web 2.0 has revolutionized information

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communication by faster information sharing, networking, and enabling multimedia services. The evolution of social network and social sharing has forced libraries to adopt this technology in their routine services to meet user's expectations and achieve immediate information delivery. Information professionals are now expected to be aware and capable of using and demonstrating emerging ICTs. Application of ICT is posing a particular challenge to library professionals in developing countries. There is need for additional training to augment the traditional skills so as to develop competency in ICT use. These issues make it necessary to study the ICT skills needed for the information professionals in this changing scenario. The ICT has changed our philosophy of serving the user by LIS professionals, due to the advancement of ICT application libraries are providing both prints as well as electronic and ICT based information services. Nowadays, the users can access the information without wasting any time with the change in trends of delivery or access of information from traditional methods to digital methods. Due

to digital transformation, LIS professionals must acquire the right skills to discharge their duties efficiently and must be trained in the application of various ICT tools like automation, Bibliographic standards, ICT based library services, web 2.0 skills, mobile information services, ILMS, Citation, IR, etc. The LIS professionals must learn and adjust themselves to a rapidly changing the environment by acquiring various ICT skills so that they can become valuable assets for the organization. Additionally, LIS professionals need to update their ICT skill on a regular basis to work effectively in the digital environment. Hence, LIS professionals have a role to play by acquiring ICT skills to discharge their duties. Now library professionals are being compelled to absorb the changes and pace with the advancement of new technology. In this magical era of computer and internet almost all the office works are performed with the help of computers. Almost all establishments like shops, banks, government offices, accounting firms etc. use their own software and gain rapid growth with the help of technology. The office workers in these organizations may be expert only in the software they use daily but they may not be computer experts. Organizations usually appoint or outsource a system expert to solve the errors in software/hardware/ networks etc. During the early years of computerization academic libraries also worked with the help of outsourced or institutional level appointed computer experts to solve the computer related problems. If the libraries had confined to the only responsibility of doing day today works i.e. completing the routine works easily with the help of computers like banks, shops etc. do even today, the same system would have been continued even today. But, when the idea of digital library is realized, libraries are being swallowed by computers; the implication of the term resources has become electronic resources and the library working with the help of computers has shifted to electronic library working within the computers. At this point, there were only two options before the library professionals; either to acquire knowledge and skill to manage electronic resources too in the computer or get ready to leave the field. Like the theory of survival of the fittest, only those who can work independently on computer and electronic resource management by using information technology tools and techniques can survive in the field hereafter.

EXPECTATIONS OF LIBRARY USERS

In the modern world's knowledge based society information is considered as a commodity and one can survive in information market only if high level consumer satisfaction is provided. Customer satisfaction is very essential for the success and existence of any kind of service or business firm. Even the slight changes in the interest of customer will cause big changes in the market. As information seekers, the library customer's tastes and attitudes have been greatly influenced by the advent of Information Technology. The latest studies show that students, teachers and researchers depend on and prefer e-resources to print resources for conducting their studies and research. Study on 'Meeting the needs of remote library users' shows the preference and demand for full-text online resources is a common trend among both on campus and remote students. Littman and Connaway conducted a circulation analysis and compared the usage of 7880 titles that were available in both Print and electronic formats at the Duke University libraries which provides information on the use of e-books and implication for collection development. The study shows that e-books received more use than print books. The study underlines the decline tendency of the use of print books. A survey on 'mobile phone application use by under graduate university students in Southern Mississippi reveals that hand held, internet ready devices that employ specific applications are increasingly being utilized for information seeking and 76 percent of under graduate students are using apps to find academic information. As the use of smart phone has become universal, the number of internet users also has considerably increased and people's bigotry against technology has been decreased. In the new generation, the new born children acquire skills of using mobile phone and tablet before they acquire their own mother tongue. Academic libraries have to serve a new community in which people get involved in technology to the extent that they can't live a moment without Information and Communication Technology.

PROFESSIONAL SKILLS

Professional competencies related to the special librarians' knowledge in the areas of information resources, information access, technology, management and research and the ability to use these areas of knowledge as a basis for providing library and information services. Professional competencies further include four major competencies, each supported with specific skills:

- a. Managing Information Organizations.
- b. Managing Information Resources.
- c. Managing Information Services.

d. Applying Information Tools and Technologies.

Personal competencies, comprise a set of skills, attitudes' and values that enable librarians to work efficiently, good communicators; focus on continuing learning throughout their careers; demonstrate value added nature of their contributions; and survive In the new field of work. Skill denotes the ability to do a specific job well. The ability of a person to do a particular work in time with perfection can be called 'skill'. For library professionals general, specific and professional skills are indispensable. In the knowledge based economy of modern society, in which information is regarded as a commodity, only multi-faceted genius persons who are able to do many things at a time, can lead a library ahead catering the demands of the new generation. A library professional has to work as a manager who has great skill in resource management and customer relationship, as a good teacher or trainer when the orientation or training programs are conducted, as a good time manager who completes work time bound, as a project manager who shows proficiency in preparing and presenting new projects, as an excellent communicator whose approach is charismatic towards superiors as well as the subordinates, as an efficient evaluator. For such a library professional it is very essential to have different skills like general skills, management skills and professional skills. Library professionals have been performing their duties with sufficient skills for many years. It was during the last decades of 20th century, when information technology began to swallow library that ICT skill also became a compulsory skill for library professionals.

IT SKILLS REQUIRED FOR LIBRARY PROFESSIONALS

It is becoming increasingly apparent that professionals, working within library the technological environments, needed strong Information Technology Skills which extended beyond expertise in the use of automated library management systems for general housekeeping purposes. However, the actual nature and level of these skills was less clear. In converged services, i.e. those where computing and library services had been integrated, and in those services with strong IT focus, distinctions between 'computing' services and 'information' services were starting to blur, with library professionals tending to be deployed on the basis of their experience and skills, rather than their professionals qualifications.

Increased provision of workstations, the growth of electronic information resources, and the increasing popularity of the Internet, has led to a requirement for library professions who are confined with computers, and who are able to support and serve others. The digital era requires professionals who thrive on change, and who are proactive in terms of both their approach to work and their own professional development. All library professionals have to acquire I T skills, mainly in three areas of information technology, i.e. hardware, software and web applications. As electronic resources too have become part of library resources, the management of electronic resources becomes the responsibility of librarian.

HARDWARE SKILL

Every equipment and machines which are used to make computers functioning, and also those which are working with the help of computers including server, pc s, printer, document scanner, barcode scanner, RFID, photo copier, network switches, cables, connector, modem, UPS etc. can be termed in single word as IT hardware. The term hardware skill denotes one's ability to handle hardware of computer and related equipment including its purchase and installation. Only a skilled person in hardware can purchase and install computers and related equipment without fault. Library professional should be capable of checking them and ensuring their proper functioning.

SOFTWARE SKILL

Computer software is the single most important technology on the world stage. And it is also a prime example of the law of unintended consequences. No one in the 1950s could have predicted that software would become an indispensable technology for business, science, and engineering, that software would enable the creation of new technologies and the demise of older technologies. While selecting the operating system and other softwares one has to consider the capacity and type of desk top or server system, nature of job they are going to do using the system, policy of library, economic status etc. Knowledge in the software which is used in the computerized library or digital library is essential for library professionals. Only those who are well versed in general purpose software designed for common use as well as special purpose applications designed specially for library operations can handle the operations of modern library efficiently by exploring the unlimited possibilities of information

technology.

OPERATING SYSTEM

An operating system is a program that acts as an interface between the user and the computer hardware and controls the execution of all kinds of programs.



Following are some of important functions of an operating System.

- Memory Management
- Processor Management
- Device Management
- File Management
- Security
- Control over system performance
- Job accounting
- Error detecting aids
- Coordination between other software and users

Computers, servers, tablets, smart phones etc. require a system software to control and manage all hardware and software in a system which is known as operating system. Operating system is a set of instructions for performing basic task of computers such as receiving input from key board, displaying output in monitor, keeping files in storage devices and controlling system peripherals such as printer, scanner etc. Operating system keeps traffic control between different applications which are working simultaneously.

CONTENT DEVELOPMENT SOFTWARE

Switching from traditional learning resources to digital learning resources is a trend in education. Electronic content means the content developed by using computer or other electronic tools with the help of specific software. E-content is very popular in academic institution because of its flexibility of place, time and simplicity in handling. File creation and content development by using electronic communication tools and software is one of the important areas of library profession. It can be achieved easily to the satisfactory level of both academic and official communication using e-files through electronic media. It is essential for the library professionals to have sufficient knowledge and skill to use the general and specific softwares in order to create and edit different types of files such as text, image, slides, audio, video, animation etc.

PROGRAMMING LANGUAGE

Programming language is a set of vocabulary and grammatical rules for instructing a computer to perform specific tasks. It gives proper instructions to computer about how to work to provide various kinds of output. Knowledge in programming language which is used to create the software used in the library will enable the library professional to provide the computer based services in the easiest way. Open source softwares have gained great popularity now a days, and knowledge in programming language is very important for library professionals to do such works as software coding, editing and customization independently.

DATABASE MANAGEMENT SYSTEM (DBMS)

A Database Management System is the software system that allows users to define, create and maintain a database and provides controlled access to the data. A database is a logically coherent collection of data with some inherent meaning. The database is often used to refer to the data itself, however, there are other additional components that also form part of a complete database management system. This software application can be used to communicate with end users and interact with other software and packages. DBMS should be a part of all library management system and digital library software and librarian should have the ability to manage data using DBMS.

MULTIMEDIA

Multimedia concepts behind what is emerging today date back to over four decades to a series of visionary thinkers who foresaw the evolution of computers towards richer personalized devices that would become an extension of the individual. In future devices available for individuals would be memex, a device in which one stores all his books, records, and communications, and which is mechanized so that it can be consulted with exceeding speed and flexibility. It is an enlarged intimate supplement to his memory. "The memex would additionally be an associative device, so that related items could be easily located."

RADIO FREQUENCY IDENTIFICATION (RFID) TECHNOLOGY

Libraries today provide books, of course, and other materials as well. Their wares include magazines, videotapes, CDs, DVDs, Video games and newspapers. The physical retrofitting of library materials is generally simple. Existing bar codes are scanned into a conversion station and programmed RFID tags are produced. Choosing a conversion workflow process is less simple. Some libraries tag all of their new books as they are added to the collection. Others start with subsections of their collection in order to get accustomed to the system and field test operations. A combined self-check conversion machine would make it possible to by pass formal conversional together. The conversion can happen as patrons check out materials, and the most-used elements of the collection will receive the fastest conversion. After about a year, libraries run a report to see what remains to be tagged and do those. The International Standard Book Number (ISBN) is an industry supported numbering system for books. It identifies the title and edition of the book. The number libraries code into the tag is not the ISBN number, borrower, however. Libraries use a unique, arbitrary identification number for each book, which keys back to the library's database to get its identity. This system has privacy protections, so no one without access to the library's internal computer system can scan the book to see what people are reading. Patrons wishing to check out materials set the items on a desk. The system reads the tags and displays the titles on a screen. Patrons touch the screen, receive a receipt, and leave the library. When they return books, they receive a receipt indicating the items returned. Smart bins scan the returned books and sort them into appropriate bins.

CONTENT MANAGEMENT SYSTEM (CMS)

Content management system (CMS) is a web based application intended to create, edit,

publish, organize and maintain digital contents. CMS acts as a Graphical User Interface (GUI) by communicating with database through URL and making information in the intended form. Millions of digital information are coming out day by day. CMS has become one of the favorite applications of libraries as it helps in the preservation, storage and retrieval of ever growing digital resources in a web environment without the complexity of programming. Knowledge in content management system, which can be used to manage digital content or web content in an easy way, is indispensable for library professionals in modern digital era.

PLAGIARISM DETECTION SOFTWARE

Plagiarism means copying of another person's ideas, texts, inventions or other creative work or intellectual property and presenting it fully or partially as one's own original work. Plagiarism detection software is used to locate instances of plagiarism within a work or document. Plagiarism detection software is essential to detect instances of plagiarism in research papers and other works coming out from academic institutions or research and development institutions and also to make out the quantity of plagiarism. Library professionals shall have great ability and skill in using plagiarism detection software which is designed to find out plagiarism in a work, document or research paper.

REFERENCE MANAGEMENT SOFTWARE

Reference management software (RMS) is an application which provides the authors and scholars with the facility of a personal library in digital platform and keeps articles and other works and that can be retrieved with key word search facility and helps to prepare references by selecting necessary citation style. Research scholars and faculty members can make use of this application for sorting and storing articles and other resources in their topic area and also can get bibliographic citations automatically in the necessary writing styles. Academic library professionals must gain knowledge in Reference management software which helps the scholars and authors for reference and doing the bibliographic citation in different styles and format easily and keep digital papers with search facility.

DIGITAL LIBRARY AND DIGITAL REPOSITORY SYSTEM

Digital library is viewed as an electronic media

platform where the selection, collection, processing, preservation, storage and retrieval of information or documents in digital format are performed independently. Different types of information technology tools and techniques are needed to process the information, which are different in size, different in programming languages and in different file formats to suit the user. Library professionals should be well versed in digital library/ digital repository software used in digital libraries in order to manage resources in electronic format.

LIBRARY MANAGEMENT SYSTEM

The whole resource planning system of a library, which includes all materials, resources and activities of the library, can be called as library management system. Commercial/ Open Source Software packages are available to automate all the activities of a library management system. It is very important to select appropriate software, which suit the structure and nature of the library, to do all the little and large works. Integrated library management system is an application specially designed for doing all routine works in library with accuracy and great speed by using computers. Library professional should be proficient in this application.

WEB APPLICATIONS

As the best cost effective communication channel internet is used to do millions of business and information communication works. The World Wide Web is an international hypertext system that links together millions of documents. A hypertext link is a word or a picture, which requests a different file from the Internet when you click on it. Hypertext markup language (HTML) is a collection of tags, which is used to create formatted hypertext documents. A Web page is a document created using HTML. A website is a collection of related pages. Web pages and sites can be stored on the hard drive of a local computer or a Web server on the Internet. A Web browser is a program that displays the Web pages it retrieves. Popular browers include Microsoft Internet Explorer, Netscape Navigator, Mozilla, and Konqueror. Library professionals must gain sufficient knowledge and skill in web applications and web technology in order to make the remote access possible using internet browser and web technology, to give the IT based services including web OPAC, and to perform other online jobs in the best possible way.

MACHINE LEARNING

Machine learning is only part of what a system required to become an Artificial Intelligence. The machine learning portion of the picture enable an Artificial Intelligence to perform these tasks.

- Adapt to new circumstances that the original developer dint not envision.
- Detect patterns in all sorts of data sources.
- Create new behaviors based on the recognized patterns.
- Make decisions based on the success or failure of these behaviors.

The use of algorithms to manipulate data is the centerpiece of machine learning. To prove successful, a machine learning session must use an appropriate algorithm to achieve a desired result. In addition, the data must lend itself to analysis using the desired algorithm, or it requires a careful preparation by scientists.

ARTIFICIAL INTELLIGENCE

Artificial Intelligence is concerned with intelligent behavior in artifacts. Intelligent behavior, in turn, involves perception, reasoning, learning, communicating, and acting in complex environments. Artificial Intelligence encompasses many other disciplines to simulate the though process successfully. In addition to machine learning, Artificial intelligence normally includes

- Natural language processing
- Natural language understanding
- Knowledge representation
- Planning in the form of goal seeking
- Robotics

SECURITY SOFTWARE

Software designed to provide sufficient security to the data saved in the computer, computer network and other activities in computer is called security software or Antivirus software. Security software is essential not only to protect computers, computer network and the data saved from cyberattack, but also to keep the valuable information saved in computer without allowing any leakage. The selection of antivirus software depends on the capacity of computer and the nature work it does. Data encryption software to protect the data saved in the computer, Firewall software to prevent intrusion through internet/network, Spyware removal software to prevent the spyware of data and activities performed in a computer etc. are available for different types of needs. A single software package for all these activities can also be used. Library professional should be proficient in security software.

CONCLUSION

ICT provides libraries an opportunity to give value added information services and access to a wide variety of digital based information resources to their clients. In this current situation, whereby ICT are being continuously updated, and the traditional formats are being replaced by digital formats, regular training for the library professionals in changing technology is inevitable. In-house training programs are more effective in libraries. From the present survey it is clear that most of the ICT technologies which are taken for this study are not yet been introduced in the Kerala University library system. Therefore the library professionals are not in a position to use these technologies in their work. This will create a low level of technological skill development among the professionals working in this library system. Concerning the implementation of the technologies, lack of support from the authority is the major issue in university library. The study concludes that the

university library needs proper ICT infrastructure and training to the professionals in using the digital resources effectively.

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A Study on Assessment of Search Features and Their Consequences in Digital Libraries

Manjunath N

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Manjunath N/A Study on Assessment of Search Features and Their Consequences in Digital Libraries/Indian J Lib Inf Sci 2022;16(2):137-141.

Abstract

This muse which was imply out to tax the pry into shape and their consequences in digital libraries, investigate 32 search characteristic and 29 expand characteristic in 8 digital libraries (which embody Government, Private and Deemed to be Universities). Results show that as far as investigate and display features are affected to digital library.

Keyword: Digital library; Search feature; Display feature.

INTRODUCTION

Human-computer interaction is a branch of knowledge which deals with data processor designation, assessment, and act for nominal usage and the ponder of the phenomena around it. The main aim of this instruction is to develop the interaction between computers and their users by means of producing more suitable and practical computers which are in assent with users' needs. One of the issues in the field of interaction between man and information processing system is the assessment strategies and the illustration

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Address for Correspondence: Manjunath N, Selection Grade Librarian, Government First Grade College for Women Doddaballapur, Bangalore, Rural 561203, Karnataka, India. E-mail: manju2669@gmail.com Received on: 02.03.2022 Accepted on: 05.04.2022 between interfaces. Interfaces may be said to do as a medium between the users and the databases, and in order to execute this, there needs to be a religious understanding of the ultimate system users` needs. It's a usual fact that interface is a determining interaction between the users, so it seems that like any other interface, this one also should be continuously charged so as to compel a clear intelligent

Identifying weak points and challenges regarding the relationship with digital libraries, will lead the parties involved, including users, librarians, computer experts, and even cognitive psychologists, to find a solution to this problem. This will encourage them to try their best and design new methods which are more effective and practical. Novelty of digital libraries and their rapid growth have caused so many researchers to study the field. As Jeng (2005) mentioned, however, attention toward criteria for assessment of digital libraries, and particularly toward their users has been low. So there seemed to be lack of studies in the field, especially in Iran; and this has caused the authors of the present article to assess search features and their consequences on digital libraries in Iran. Fundamental questions of this study are as follows:

- Which digital library has the most search features?
- What are the search features which are common among most digital libraries?
- Which digital library has the most display features?
- What are the display features which are in common among most digital libraries?

LITERATURE REVIEW

Nowadays, discussions on digital libraries have become one of the most important ability of the fields such as librarianship, instruction technology, and computer sciences. There has not been much muse being done on the field of the instant contemplation, so we may just name those muse which have a finish attitude towards the subject.

Smith (2000) has studied the characteristics of digital libraries and suggests that digital libraries must have a wide spectrum of search features, including Boolean search, Proximity search, Truncation search, etc. he chose11 digital libraries and compared their search features. His findings revealed that digital libraries in that stage, mostly did not acquire the search features needed. For example, less than half of the libraries investigated had the ability of vocabulary control; less than half of the foregoing libraries had proximity searching capacity; only one library was capable of browsing keyword index; and none of them would let the searcher refine his first search.

Also, *Andrew Chulk and colleagues* (2003) examined three journal databases according to three general characteristics including interface, content, and cost in order to determine the preferences of these databases for academic and public libraries. Components such as usability, search capabilities, quality of database help from interface; components such as scope, currency, comprehensibility, accuracy and consistency, citations and abstracts of database from content, were examined.

In a comparative study which was done by *Vilar and Zumer* (2005) to determine the strengths and weaknesses of four electronic full-text databases offering web-based journals, components of user friendliness including the vocabulary and type of the interface, navigating and personalizing the display screen, and features of efficiency consisting of choosing the database, search formulation, result processing, and help options were all examined.

Findings revealed that despite the similarities between the four databases examined, there were also differences. Much of the differences were seen in search formulation, and vocabulary and type of user interface.

Su (2005) has investigated desirable search features of web-based scholarly e-book systems. He considered two general usual search and browse possibility, to be the as desirable features of e-books. Nabavi (2006) studied search features in 14 digital libraries (10 digital libraries outside Iran, and 4 inside)using a check list. The results of this study showed that these digital libraries did not act the same in providing their users with different search facilities so that some digital libraries such as American Memory and ECM provided 8 out of 9 search features which were considered in this study, guiding the users more efficiently to access their intended sources. But Classic Articles digital library did not provide its users with any of search features, and therefore was considered to occupy the least position in the assessment list.

In another study *Alijani and Dehghani* (2006) compared and examined free versions of Eric and Search Eric with commercial versions of Ebsco and First Search, from ERIC. A check list consisting of five items of general information, search features, display options, retrieval options, and unique features, was used to assess the databases in this study. Findings showed that considering the five mentioned items, versions of Ebsco, First Search, Search Eric, and Eric respectively had the most features.

Alijani and Dehghani (2007) investigated the free versions of four databases called Ebrary, Net Library, Questia, and Safari, using a check list consisting of 5 categories which were as follow: general information, search features, display options, storage and retrieval options, unique features. The findings revealed that Net Library and Questia were at first place by 40 scores, and Safari with 36 scores and Ebrary with 35 scores were at second and third.

Mehrad and Zahedi (2007) studied the user interfaces of two hosts (Regional Information Center for Science and Technology and Research Center of scientific Information and Documents of Iran (Iran Doc) and 4 foreign hosts (Proquest, Emerald, Elsevier, and Ebsco) providing databases. They tried to compare the user interfaces of these hosts using a comprehensive check list which consisted of five parts as follow: general features, search, retrieval, display and user friendliness characteristics. Findings revealed that between hosts, were respectively Regional Information Center for Science and Technology and Iran Doc, and amonggoreign hosts Ebsco, Emerald, Proquest, and Elsevier, respectively had the most characteristics from the fives features mentioned above.

This overview shows none of these digital libraries were investigated up to now from this point of view. Asthe mentioned digital libraries are among the first experiences of digital libraries, it is necessary to know their overall conditions. Meanwhile most of the studies have examined some determined features in digital libraries and databases. This study aims to study the two common features, search and display, which are most important in the users' eyes.

METHODOLOGY

The Population of this evaluative research covered 8 digital libraries, including Deed, University of Science and Technology (UST), Pars Azarakhsh (PAZ), Noor, Astan-e Qods-e Razavi (AQR), Tebian, National Library of Iran (NL), and Al al-Bait). The data were gatherd by a check list which is made by examining most of the check lists available in the literature and attempts were done to have a comprehensive check list in the two features. To gathere the data, each digital library features was compared with the check list prepared. If a digital library possessed each of the intended search and display features, it would be scored with 1, and if not would be scored with 0. At the end the scores gained by each considered digital library were summed.

The Population of this appraising scrutiny hidden 8 digital libraries, comprehend Government, Private and Deemed to be Universities The data were gatherd by a setback attend which is made by examining most of the counter balance incline valid in the letters and assay were done to have a extensive reproof incline in the two form. To gathere the data, each digital library shape was comparison with the repulse attend adapted. If a digital library owns each of the forcible hunt and exhibition form, it would be behalf with 1, and if not would be charge with 0. At the limit the record dexterous by each weigh digital library were cast up.

FINDINGS

Which digital library has the most features?

The findings showed that Government Universities

digital library with 31 (97%) out of 32 scores of this part, Government Universities with 24 (75%), and Deemed to be Universities with 20 scores (62.5%) were ranked respectively first and second, the Deemed to be Universities had the least features with only 6 scores (18.75%). Relational, synonyms, fuzzy and conceptual search features can be considered as the strong aspects of a digital library such as Private Universities. These features were not observed in any other digital library considered. Proximity search feature existed only in Government Universities, and stemming search existed both in Private Universities and Deemed to be Universities. Unique features of Government Universities have made a huge gap between itself and other digital libraries such as Government Universities which occupied the second place in the list.

The results of of the study by Alijani and Dehghani (2007) showed that the search capabilites in Net library (83/33%), Questia (72/22%), Ebrary (66/66%), and Safari (61/11%) were compatible with these study ones. In other words, digital libraries possess better search features in comparison with international book-oriented databases.

The investigation of search features of databases such as SID, Magiran, and Namamatn, showed that these journal databases did not acquire the features mentioned in the check list, thus their design in this part was weak (Assadallahi, 2009). Such results revealed the fact that digital libraries in Iran possed more strong aspects over Persian journal databases, and it seems that digital libraries have functioned well.

What are the search features that are common among most digital libraries?

Simple seek, roomhuntprobablesay, denomination, and bibliographical intelligence characteristics were the shape that seemed to be common among all the choice libraries with the most behalf (8). But proximity, related, conceptive, synonyms, and curlyscrutinizing were the least in this desire with the lower most score (1). Results of the contemplation by Assadallahi and Nowkarizi (2010), Othaman and Halim (2004), and Direcks (2003) conduct that Boolean, cyclic, and truncation search shape were form that seemed vulgar in databases. Some parts of this meditation comply with the recount studies, since address try shape was a trite feature in all digital libraries.

Which digital library has the most results display features?

Alijani and Dehghani's (2007) study on display features in user interfaces of international databases such as Ebrary and Netlibray (with 90%), Questia (with 80%), and Safari (with 70%) revealed that these features inprinted book-oriented databases have been paid more attention over the digital libraries. Assadallahi andNowkarizi (2010) in their study, showed that display features in journal databases such as Magiran and SID were more important than in Namamatn. Namamatn lacked 60% of the mentioned features in her study. So it seems that digital libraries have done better than journal databases in Iran in designing their display features.

What are the searches results display features which are common among the digital libraries investigated?

The most tryeffectdescries form in these libraries were as follows: Displaying compendious records with 8 reasons, judgment the full complaint of documents with 7 behalf, and capital entries hyperlink form with 6 scores. Features that seemed to seem less in these digital libraries, were contingency of purify pervious seek and clustering with 1 motive.

DISCUSSION AND CONCLUSION

Assessment is a severe part to clear up the enlightenment systems' problems, since it can afford analysis and identification of system form, and also foreground their exhausted and forcible aspects. The circuit and alter which have deflect digital libraries into a modern kind exact the assessment of inquire and flaunt characteristic.

That is that seek and recovery shape of any digital library should experience the necessarily of all of its users, i.e. both callow and veteran users should get what they destitution second-hand these seek shape. Also these libraries should supply uncertain investigate facilities to obstacle more adroit users do bearing kinds of examine (Smith, 2000). Findings show that search digital libraries do not hide the entiretrycharacteristic. However, private and deemed to be University have the most inquire and spread out characteristic.

These libraries have proof to furnish as much shape as likely for any of their users whatever their gradation, worn the meet of adroit librarians and library softwares. For those digital libraries which seignior's have the criteria particularize in the draftlean, it is insinuate to take these criteria into reason and animate their pry into shape; since nothing is more influential to hunt shape than these criteria. Weak inquire shape will concern capacity of a library and will become it rather visionary. According to the findings of the contemplation, it is inspire that libraries necessity a precise and average intend for their try and expand characteristic to spare coinage, repetition, and product might. It is also hint that these libraries ID their infirm characteristic accordingly to the arise of this meditation, and disapprove their provision respecting the indispensably of their users. In arrangement to reform the profession of try and exhibit form, it is meliorate for libraries to usage a assembly comprise of digital library designate experts and also experts in library and complaint instruct. In this moving, not only the constitutive and technical issuance are weigh, but also satiate form which arise from particular avail in advertisement and library technology will be satisfied study.

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A Study on Assessing Digital Library Software: With special Reference to the Greenstone Digital Library Software

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Abstract

The disclosure of digital libraries grants many opportunities and question for the settlement of centered collections of digital oppose. As librarians in the India seek to appraise the existent software and systems, and to ID the most appropriate technology and methods of construction digital libraries, several scrutiny egress emerge for muse and analysis. These egress include, Internet-supported apportionment, the profession to furnish cleaving and compatible views of the resort held, metadata elaboration, representation of multimedia and hypermedia dogma, interoperability, portability, data commute, and the performance of the mortal-electronic computer interface. This paper identifies types of digital libraries full digital libraries, special and "hybrid" collections, and examines definitions currently in use. The focus is on collections built for specific user communities. Open-source and commercial software are briefly examined as well generic and specific library applications.

Keywords: Digital Library; Open-source; Software; Green Stone.

INTRODUCTION

The India has the potential to lay open digital libraries as a abject of lengthen the comprehend of library and instruction systems. Users are demonstrating better capabilities in admission and searching for information, software and hardware is ready decrease cost, and an influential arrange of this possibility has been the increased accessibility

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of the Internet to individuals, libraries, reprove, universities, corporations etc. Figures if by the Surveys show that in around 400 Internet Service Providers in the Wider India and this reckon is increasing (prenominal) as avail and accoutering cause are being conquer.

The Indian University libraries swell other digital, energizing and electronic libraries with varying figure of bestowal. There is no unmixed disagreement between the three name and there is some override with "submissive gate" and "portals". In this papery the expression "digital library" will be application to cover this wander of wording. Christine Borgman who has analyzed several definitions of digital libraries has recognized the mayor elements of digital libraries as comprehend:

 A set of electronic resources and associated technical capabilities for creating, screening and using information;

- Construction for a given user community;
- Functional capabilities to support the information needs, and uses of that community.

In addition to the above emphasis on the needs of a given community of users, Borgman also identifies other elements including:

- Full content of the information resources in
- Electronic forms; accommodation of multimedia formats;

The 1998 explanation of digital libraries by the Digital Library Federation which Borgman express as the "first succinct definition" induce the issues

of "an rudimental base" and "betroth the obstinacy extra time of collections of digital performance."

The cogency of digital libraries trust on the ability of the digital library software to furnish the exact form to concede creators and users to paroxysm, require powerful use, and betroth security of the desired several-format collections. Building digital libraries is now being done for the evolution of collections of precept, rudimental repositories of monument, comparison document, collections of electronic theses etc. The outgrowth of charged and selecting software can be accomplished as gift two expanded areas of selection, the choice between commercial and exposed-origin software.

Some Commercial and opensource library application software	Open-source generic	Open-source specialized
Contentdm generic http://www.oclc. org/contentdm	Koha library system generic http:// www.koha.org	E-prints self-archiving and open archives - designed for refereed research literature. http://www.eprints.org
DL Box generic	D Space generic designed for research literature http://www.dspace.org	ETD-db designed for e-theses http:// scholar.libedu/ETDdb
	Greenstone digital library software generic http://www.greenstone.org	

Table 1: lists some commercial and open source library application software.

Open origin software which is based on the delivery of open standards, dividend fountain code, and collaborative deduction, afford an economical disjunction to libraries' trust upon commercially contribute software. Such software is familiar of cost but there are detriment of documentation, school and sometimes customization, and change.

With obvious-rise software, the intelligence technology infrastructure that is indispensable for library operations and services can be shape harmonious to uncovered standards and as such would be potentially interoperable with other substantial software and systems. Some of the requirements of digital libraries terminate:

Facilitating networking;

- Ubiquitous availability to libraries;
- Capability of being tailored to suit the needs and circumstances of individual libraries;
- Adequate documentation-printed or online;
- Existence of an active user group.

Open-source software is usually the effect of scrutiny jut and may be well protect by the plan abound at least for an drop cap period. The Greenstone Digital Library Software is produced by the New Zealand Digital Library Project at the University of Waikato, Department of Computer Science, and improved and diversified in coworking with UNESCO. Documentation has so greatly has been well distributed on the Internet and the Greenstone use assembly is nimbly duty.

Another open-source software bale D Space was exhibit by the Massachusetts Institute of Technology (MIT) in collaboration Hewlett Packard. Members of the D Space Federation outshoot are cupellation and implementing D Space and MIT periodically landlord use assemblage meetings. The idea of exposed-source software most often animate ideas of unobstructed available software which comes with an abundance of upright. Altman in examining Open Source Software for libraries resume "the broad equitable it crown to the destroyer" "to custom qualify and assign the software" as:

- Rights to use without discrimination;
- Full rights to create derived works and access to Source Codes, freedom to modify and distribute and integrity of authorship;
- Rights to redistribute under the same license as the original.

In assessing open-fountain software for digital libraries in the India we can respect the three mainhamper moral code proposed by Christine Borgman: "interoperability, portability and data exchange". As databases fall easier to constitute we can envisage the eduction of numerous uncommon collections contageous advantageous of the accessibility of open-source software, and expanding advice and communications infrastructure. Development of these specific collections is also expedited by the accessibility of multimedia arrange, and collections of a diversity of digital show. The royal blame in Levy digital library software is therefore to settle the creature of characteristic which can go to "interoperability, portability and data traffic". Such further must be even against the availableness of thirst-word nurture, compatibility and stableness.

The Greenstone Digital Library Software furnish an interesting warning of an frank source software bale free under the terms of the GNU General Public License. It is described as" a suite of software for construction and distributing digital library collections which furnish a renovated passage of organizing intelligence and declare it on the Internet or on CD-ROM". Greenstone is make by the New Zealand Digital Library jut at the University of Waikato, and distributed globally in collaboration with UNESCO and the Humanity Libraries Project. Greenstone was first acquit in 2001 and has had several versions trial since then.

An examination of the desirable features listed above in relation to Greenstone can be used to assess the suitability of this package for India libraries.

The system should be able to distribute collections via networks and via the Internet.

Greenstone provides access to collections via the Internet and local networks e.g. The New Zealand Digital Library is made up of a number of collections and is accessible at http://www.sadl.uleth.ca/nz/ cgi-bin/library. Collections once created and —built can be previewed in a Web browser and accessed via the Internet.

There should be options for use of popular operating systems

Greenstone operates on MAC OS X, Windows, and POSIX (UNIX/LINUX). Users are given the choice of operating system at the point of downloading.

There should be security features to ensure proper administration of access to the collections.

Greenstone offers administration and security features with sign in procedures which use passwords. At the time of installation the user is able to establish a password. The Administrator also has a different status from the user in a networked environment.

Capability to provide not only metadata but also full text access to items.

Greenstone offers full-text collections which can be also browsed, searched and accessed by chapters and sections of items.

Immediate creation of indexes

With the Greenstone software all searching and browsing structures are built directly from the documents themselves. Links are not inserted manually, but existing links in originals are maintained. When new documents in the same format become available, they can be automatically integrated into a collection. Metadata is used to create indexes while the collection is being "built". There is automatic execution of the information, which is searchable, the ways of browsing through the items, languages and where search buttons appear.

Automatic extraction of metadata from digital objects and the ability to import required metadata sets.

Greenstone automatically extracts selected metadata and permits the import of Dublin Core and other metadata sets. Automatic extraction can be done for Language, Source, Title, ISO codes, ISBN etc.

The software should have multimedia capabilities.

Greenstone compose a variety of digital opposed in theme, images, sound and video hold. A group may have origin writing in distinct figure. Images and other non-textual important are either linked in to the textual school or accompanied by descriptions (such as outline sophism) to permit full-text searching and browse. The workmanship also let implementation of plugins and classifiers even for no-textual data.

The software should permit the development of expandable and extensible collections.

The designers report that Greenstone is "designed for multigigabyte collections and collections can contain millions of documents". The collection structures are extensible in that new features can be added by making modifications to the configuration file for each collection. This is one area which is considered as requiring some careful study, preparation and application.

Free or low-cost software without restrictions or costs for numbers of users or on distribution

Greenstone is open source software issued under the GNU General Public License and therefore attracts no direct costs. There are consequently no limitations on the numbers of users or the extent of distribution. Any modifications of the software should however, be made available to other users.

The software should have multilingual capabilities

The user interface can be used in various languages including Spanish, French, and English. Documents in a variety of languages can be processed. Unicode is used throughout the software, allowing any language to be processed in a consistent manner. Conversion is done from Unicode to an alphabet supported by the user 's Web browser.

GENERAL CONSIDERATIONS

From the optable characteristic debate above it seems that the Greenstone Digital Library Software equals the majority of the requirements. One general consideration is the circumstance that Greenstone is still relatively fresh, and seems to be principally nurture technically by the purpose team. It is still very soon to smack what the uptake will be among librarians globally and in the India. Greenstone and other digital library software attempt a unspent interval of systematize information. Staff will claim training at the conceptive horizontal and also in the itemized cosecant of the software. A likely strategy could be the disclosure by each library of a few guide collections containing digital images in formats rep of their collections. This would endure practical in-dwelling assessments and valuation of the applicability of the software to remedy use communities.

DISCUSSION

One should keep in will that Greenstone and other digital library software offer a modern way of organizing advertisement. At the instant though, it is too forward to decide how librarians in the India and globally would respond to the software. The need for stanza training at both the concipient as well as in the particular functioning of the software was distress. It was commend that each library project the generalship of worn a few pilot collections with digital effigy that would admit practical in-household assessment and evaluation of the applicability of the software to limited user communities.

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Standard journal article

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