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Web Based Information Sources and Services: A Case Study of St. Stephen's College, University of Delhi

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Introduction

The college library plays an important role in the overall development of students. Undergraduate students often visit the library to consult previous question papers and syllabi, to borrow books and other material, and to use other services. With the application of information technology and the advent of Web-based services, contents are now available to students on their desktop. Various consortia provide access to digital contents any time and in any place. Students want to see traditional services transformed into digital information services. College libraries provide information that can help lead students to graduate, post graduate, and research studies (Jefferson and Smith-Burnet, 1978). De Jager (2002) found that use of the library improved student exam results. The main objective of the college library is to provide conceptual information and provide information to students for preparing assignments. Teaching relies more on lectures than on textbooks.

The basic function of the college library is to provide the study material to its users in short possible time to serve the information requirements of the students and teachers. In this digital age, most of the college libraries have started computerization of in-house activities. Many Integrated Library Management software (ILMS) LIBSYS, SLIM ++, LIBERTY, Trodoon, LIBMAN, and open source software such as NewGenlib, Koha, Weblis, ABCD, Evergreen are also available in public domain to automate the library operations. INFLIBNET (Information Library Network) playing tremendous role in the development of libraries in India, INFLIBNET developed SOUL library automation software to university and college libraries at affordable price. Unquestionably the reputation and status of any college library depends on the quality information services provided to clients but it is rather difficult to ignore the advances in the field of ICT and libraries must adapt the new mode of information services.

About St. Stephen's College

In India about 42 central universities, 272 state universities, 130 deemed universities and 85 private universities with 6014 colleges under section 2(f) , 12(B) of UGC Act 1956 are catering the educational needs of the people of India (<http://www.ugc.ac.in>). St. Stephen's College is one of the premier institutions in India established by Cambridge mission to Delhi, Cambridge Brotherhood arrived in Delhi in 1877 to reinforce the teaching strength of school run by S.P.G mission. The College was housed in Shish Mahal in Katra Khushal Rai in Kinari Bazar from 1881 to 1890. In 1891 into own beautiful building designed by Col (later Sir) Swinton Jacob, Chief engineer of Jaipur State and in 1941 shifted to its present site in the University Enclave. College has 13 departments and presently 88 faculty members who are teaching 1400 students in the college.

St. Stephen's College Library

St. Stephen's College has well established library housed in separate wing having approximately 98000 books, 3000 online journals and a separate archival section which holds records pertaining to the history of the college. Having built over many years and in more spacious time when books were cheaper and grants went further the college library is a resource unmatched by any other under graduate institution in Delhi. It has also moved with the time, and is fully automated. Separate video library section with various documentaries makes it unique from other undergraduate libraries. In the digital section, students can access to information through an online library.

Web Enabled Library and Information Services

Due to emergence of web based information and communication technologies (ICT) and globalization of networks and exponential rise of new information and the use of traditional tools in information management have been reduced and automation of information services of library and information centre have become imperative. The basic objective of the college library is to support the college objective and basic function is to provide the study material to its user's in short possible time towards reading, study and research. Online Computer Library Centre (OCLC) conducted a study in 2002 and published the findings that students and teachers look library website for information needs.

Eventually, role of library and information professionals have changed in managing the information and apply the latest tools and technology to provide better information services in web based environment.

Web Based Library and Information Services at St. Stephen's College

To cater the information needs of students and faculty members a portal was developed (<http://www.library.ststephens.edu>), to access various e-resources by the library.

(www.library.ststephens.edu)

Apart from e-reference sources, various e-books, indexing and abstracting sources, portal contains the statistical sources of information and various online journals of UGC INFONET and electronic theses and dissertations. Home page of the library website was developed keeping in mind the undergraduate students' information requirements.

Online Catalogue Search

Library collection development policy should be supported the core mission of the library. A college library must evaluate its collection from time to time in order to check, how well it is supporting the mission of the college to promote utilization of library collection, a library must have online catalogue to search and browse the catalogue of books anytime, irrespective of location.

St. Stephen's College library provides access to its catalogue online. An online catalogue has been developed by library staff with the Php programming language and MySql as backend of the programme. Interface of the online catalogue designed with hyper text markup language.

Catalogue provides access to books, CDs/DVDs and provide basic search and advanced search facility. Books and CDs/ DVDs search can be made with title and author and keywords. Users can define range of year, up to, after and selected year of publication to precise hits results. Retrieved results can be sorted with title or author. Users of library can check status of books borrowed against their account no. List of new books are also enlisted on the Online Catalogue Page.

E-Reference

Web based information services as vital alternatives to the traditional face-to- face reference service. In early eighties virtual reference service appeared in the form of e-mail. In recent time with the emergence of chat based e-mail services such as gmail and yahoo, we began thinking of virtual refernce via web based chat and web tools provided on library websites such as FAQ or internet resource gateway. Instant messaging (IM) is virtual communication between two people using textual format, providing real time reference service. Instant messaging reference service is quite popular in USA and many of libraries in USA providing instant messaging reference service to their clients. (http://www.libsuccess.org/index.php? Title =Libraries_Using_IM_Reference). Two trends of IM can be seen: one is offered using the most commonly used IM messenger, e.g., Yahoo, MSN, AOL, etc., and other one is embedded in the web.

With the help of Trillon, Meebo, Library H3lp instant megganger(IM) aggregator, it is possible to use all e-mail lds while login to meebo, trillon IM platform. So reference librarian need not to login using different e-mail addresses. Embedded IM allows users to insert chat widgets on any webpage by inserting code. Users simply have to navigate on the webpage where widegets are visible, and users simply can initiate contact by entering the text into chat area of the widgets. In St. Stephen's College library portal, meebo is embedded in the webpage in Ask a Librarian, widegets provide simple way to students and faculty members to chat with library staff members and it require minimal training. There are few limitation of using meebo and one limitation of using the meebo IM is that more than meebo disconnect with the second member of the staff log on. Second drawback of Meebo IM is it is not accessible to screen reading software such as Jaws used by visually challenged students. (Shuva, Nafiz Zaman et al., 2010).

Citation Styles

Writing a paper in college or preparing a project report or assignment, it is significant to cite sources appropriately and follow the standard in citation process. Keeping this mind boggling method of citing sources by undergraduate students, a web page was created to help them in citation. Each citing style require different format for writing the cited sources. All the major standards are list on the webpage and indicated with heading citing styles. To assist the students in the search process, various citing tools are enlisted on the portal. A snapshot of listed citing styles are as follows:

MLA Style Easy Bib MLA 7 Reference Guide
Easy Bib MLA 7 understanding Citations
Easy Bib MLA 7 Citing Online Sources
The OWL at Purdue University Citing Styles Guide
Documenting Sources: MLA documenting list of Works Cited

Help within Text Citation

Easy Bib MLA 7 Parenthetical Guide
The OWL at Purdue: MLA text Citation the Basics

Sample Papers

MLA Research Papers
MLA Research Papers 2
Sample MLA Research Papers

APA Style

Help with Citation

Easy Bib APA 6 Reference Guide
Easy Bib APA6 Understanding Guide
Easy Bib APA 6 Citing Online Sources
The OWL at Purdue APA Guide

Help within Text Citation

Easy BIB 6 Parenthetical Citations
Easy BIB 6 Parenthetical Citations citing

Access to E-Resources through Library Website

Owing to technological revolution and advent of modern information and communication technology, academic community no longer relies upon the traditional library services. Indeed with presumption that electronic resources can utterly manage their information needs in better way as substitute to print resources. Various studies conducted by researchers revealed the increasing dependence of student's community on e-resources to fulfill their information needs

According to Saye (2001) electronic resources are resources that are generated through some electronic medium and made available to wider range of viewers both onsite or off-site via some electronic transforming machine or internet. Weng – Shung (2008) found that efficiency and capacity of electronic learning could be enhanced through the application of self methods. George et. al (2006) investigated the graduate students' usage of e-resources in Carnegie Mellon University in United States and found that students usually depend on the help of library staff to search the desired information.

Ani and Ahiauzu (2008) revealed in their study that there is a high level of developing electronic information resources in Nigerian University libraries through direct subscription for electronic information than conversion of information into electronic form and they had proposed a model of transmission of electronic information sources. The following model can be used to access e-resources.

E-sources

Access Point

Search Engine

E-books

Online databases

E-Journals

Institutional repository

Public domain databases

E-news and Announcements

Citing Styles

Harvester

Internet

(Model for Access to e-resources)

A Snapshot of E-Resources Accessible to Students:

Electronic Resources	Uniform Resource Locator
Federated Search Service	
1) JCCC	
Reference and Citation Sources	
2) Credo Reference	
3) Encyclopedia of Cyber Crime	http://jccc-ugcinfonet.in/
4) Encyclopedia Britannica	http://www.xreferplus.com/
5) Statesman Year Book Online	http://www.greenwood.com
6) Oxford Dictionary of National Biography	http://www.search.eb.com/
7) New Palgrave Dictionary of Economics Online	http://www.statesmansyearbook.com/public/ http://www.oxforddnb.com/
Bibliographic Sources	http://www.dictionaryofeconomics.com/dictionary
8) Current Abstract	http://search.ebscohost.com/
9) SciFinder Scholar	http://www.cas.org/
Citation Analysis Resources	http://www.scopus.com/
10) Scopus	http://apps.isiknowledge.com/
11) Web of Science	http://www.indiastat.com/membership/registration.aspx
Financial and Statistical Sources	http://www.worldbank.org
12) India Stat.com	

13) World bank databases	http://journals.cambridge.org
Others Full Text Sources	http://www.sciencedirect.com/
14) ACM Portal	http://gerritsen.chadwyck.com/home.do
15) Cambridge University Press Journal	
16) Elsevier Science	
17) Women's History	

College Institutional Repository

Libraries have always the place for organization to preserve information and in digital era if libraries have to remain relevant then professionals have to respond as per the changing information needs of the users.

Before initiating the process of IR we must take certain decision such as a) Who will manage it (b) What platform will be used, what initial policies will be promulgated and what marketing techniques will be used. C) Whether resources will be beneficial to users or not? D) Who will fund IR and e) Selection of software and hardware? IR of the St. Stephen's College contains the following contents which are quite beneficial to students:

- Archives
- Kooler Talk
- Oxygen: Annual Chemistry Society Journal
- Photographs
- Prospectus
- Stephanian - College Magazine
- Chemistry Department
- Papers - Students
- College Library
- e-Books
- News Clippings
- Question Papers
- Research Papers
- Videos
- Miscellaneous

Prior to starting this project, a significant portion of early discussion on the implementation of an IR concerned platforms, many questions had to be answered, including basics such as what can the software do, what kind of hardware is required, what is involved in setting up the software , and how much ongoing maintenance is required? Project Fellow and Principal Investigator looked at various sites of gateways of its kind; the team discussed and compiled lists of features that were available and would be required and also those that were not absolutely necessary. (Nabe, 2010)

Selection of software for any IR is major concern each and every platform handles the hierarchical structure differently and it is important to examine the platform to ensure that there is match between needs of the particular institution. Open source platform may have technical restrictions but they allow local customization and re-purposing that is simply not possible with commercial software's. The freedom that after considerable we found that open source platforms may be said to more closely match the goal of IR than the commercial platform (Nabe, 2010) . However, Gassman (2009) emphasized in his paper that "Free product tempting offering are tempting and a good learning tool but strategic initiatives with an opportunity for a

large gain in site yield should choose commercial product". But due to financial constraint DSpace was opted as repository platform for St. Stephen's College IR.

DSpace is far and above the most common repository platform implemented worldwide with over 350 instances, it was developed between 2000 and 2002 by a well funded collaborative effort between the MIT and Hewlett-Packard led a remarkable product that has proven successful at hundred of institutions. DSpace is freely available at <http://sourceforge.net/projects/Dspace> it requires a server that stores the files that are loaded, a Postgres or oracle database that creates the structures and allow the management of data within the repository, a web application server Apache Tomcat that deliver the web pages. Code of the DSpace is written in Java. (Nabe, 2010)

DSpace support descriptive, administrative and structural metadata, it uses qualified Dublin core and requires only a title, language and date of submission. DSpace provides the ability to configure multiple schemas beyond Dublin Core and select metadata fields from a mix of configured schemas. It also support OAI-PMH, enabling harvesting of repository content by any service providers that uses this protocol. DSpace incorporates the use of the CNRI handle system for establishing persistent identifiers, an item is viewed when the title page is opened. This is not compliant with the standards for the reporting of electronic documents. (Nabe, 2010)

Knowledge Gateway

Building of knowledge gateway was to assist the undergraduate students to locate relevant record with short span of time and full fill the Fourth Law of Library Science i.e save the time of users. Caswell (2004) in his study stated that the purpose behind the federated and gateway is to increase success at early stage of search process. The key feature of gateway is quick search and each of the features represents the starting point of research. James described the gateway as core of teaching and advocated the libraries must take its growing role in teaching and ought to be teaching libraries. Various open access contents relevant to their course curriculum were harvested. The objectives behind designing gateway were as under:

- i. Mechanism for collection, storage and preservation of all relevant material for students and teachers
- ii. Bring together significant resources for education and research on a single platform for easy access to various study material.
- iii. Enable the networking and sharing of resources within different departments of the college.
- iv. Facilitate easy availability of contents to the students and teachers community, hence encouraging interdisciplinary, cross campus learning and research.

Following steps were used for adding the contents in the Gateway:

- i. Selection of documents available on the web such as course contents and related study material.
- ii. Digitize the Contents available in fragile form such as assignment prepared by students
- iii. Metadata entry or harvesting of contents
- iv. Verification of contents and metadata

v. Release the contents to Gateway

Building of knowledge gateway enable greater availability of contents to students and teachers of all colleges in campus Delhi university via university LAN(Local Area Network) , further interoperability of digital objects help students and teacher to search the relevant digital objects in short possible time and assist undergraduate students o f knowing databases where to search the desired contents. Workflow to design the KG is given below:

Digitize the selected documents

Selection of documents

Workflow of Gateway

Students and Faculty visits the KM Website

Choose the collection to contribute

Enter the metadata of the item they wish to contribute

Project Staff verify the Metadata Entered

Project Staff choose contents

Students/ project staff choose contents

Is the record correct?

No

Yes

Project staff releases the record to Gateway

KM Contents

N-LIST

National Library and Information Services Infrastructure for Scholarly Contents (N-LIST) is cross subscription of two famous consortiums in India i.e. UGC INFONET and INDEST, A server is installed in the INFLIBNET centre to provide remote access to students and teachers of the colleges. All Government colleges and aided colleges under 12-B of University Grants Commission can take the membership. St. Stephen's College library got membership of this consortium and distributed login and password to members so that they can access various e-resources anywhere.

In NLIST e-brary contains 45000 e-books and students can view the books with e-reader button given on the page. Users can put books in the book shelves and through login and password they can view next time when login the N-LIST. Students and faculty members can access following e-journals anytime, anywhere. Through N-LIST 2000 journals can be accessed anytime, anywhere with login id

and password. Each students and faculty members have given login Id and Password to access journals and e-books, students and faculty members have given good feedback about the resources of NLIST (National Library and Information Services Infrastructure for Scholarly Contents). Following e-resources can be access through N-LIST

- a) American Institute of Physics (18 titles)
- b) [American Physical Society](#) (10 titles)
- c) Annual Review (33 titles)
- d) [Cambridge University Press](#) (224 titles)
- e) [Economic and Political Weekly \(EPW\)](#) (1 titles)
- f) Indian Journals (150 titles)
- g) Institute of Physics (46 titles)
- h) Oxford University Press (206 titles)
- i) Royal Society of Chemistry (29 titles)

E-books

- j) H.W.Wilson Company (1420 titles)
- k) Net library (936 titles)
- l) E-brary (45000) titles (L) My Library McGraw-Hill(1308 titles)

Library User Survey

Undoubtedly, the access of electronic information has changed the role of library and information centre, online electronic information can be stored, accessed anytime, irrespective of location. A study was conducted to find out the usage of electronic information sources with following objectives:

- a) Awareness of electronic information sources by faculty members in St. Stephen's College.
- b) To know how frequently the faculty members using the electronic information sources.
- c) To know which place is used more for accessing the electronic information sources and difficulty faced by faculty members in using electronic information sources.
- d) To know the usefulness of electronic information and purpose of using electronic sources.
- e) Rating the electronic information available to faculty members and method of search and retrieval.

Several studies have been carried out in various universities around the globe to study the use of electronic resources, Wen Shung (2008) in his study found that efficiency and capacity of electronic resources can be comprehensively enhanced through the application of self organizing map/ data mining method. In another study, Solis and Hampton (2009) in their findings expressed students and faculty members appreciate the library resources which are relevant to direct class assignments. Information presented in such as way that undergraduate students can utilize the maximum information available in the library and use minimum information through search engine Google, yahoo, altavista etc. A significant study

carried out in 2009 by primary research group, surveyed 400 college students and found the correlation between grades and online research the higher the grade point, the less the information obtained from search engines for research. Barrett (2005) conducted a study to know the usage of e-resources and reveal that users of the library complain the lack of electronic version of resources. Ali (2005) in his study conducted in Indian Institute of Technology (IIT) Delhi found that Boolean login truncation were the most used operator and printing facility, computer machine and lack of trained staff are the major hindrances in the use of e-resources. Borrego et al (2007) surveyed in the University of Catalan in Spain reveals that teaching staff is aware of the electronic resources and preferred the electronic journals compare to the printed journals. Monopoli et al (2002) conducted a study in University of Patras and expressed that academics used e-resources for the purpose of writing research papers and teaching and preferred to read articles on screen.

Kelley and Orr (2003) in his study conducted at University of Maryland found that graduate students are more likely to use the e-resources compare to undergraduate students in the university. Min and Yang (2010) in his study described that users' main purpose of using the library is to find and locate information resources and faculty members agreed that their research cannot move forward without library resources.

Objectives of the Study

Study set up the following objectives (a) to study the awareness, use, method of using the e-resources among the faculty members.

(b) To study the frequency and purpose of using the e-resources by the faculty members.

c) To identify the search method used in searching the electronic resources.

d) Identify the method of training to use the e-resources to conduct the training programme in the college.

e) To rate the quality of library and information services and usage of e-resources through the library portal.

Methodology and Analysis of Data

In order to know the usage of electronic information sources a survey was conducted in 2011. A questionnaire was prepared to collect the data pertaining to objectives. A total of 89 questionnaires were distributed and 75.28 % questionnaires were received.

Awareness of E-Resources

Table depicts below summarizes the awareness of electronic resources by and table shows that 97.02% of the respondents are aware about the electronic resources, whereas only 2.98% respondents indicated they are not aware. However, science faculty members (96.88%) are more aware comparative to humanities and social science (85.71%).

(Table: 1 Awareness of e-resources)

Awareness of electronic resources	Humanities and Social Sc	%	Science	%	Total
	N= 35		N=32		

Yes	30	85.71%	31	96.88%	65 (97.02%)
No	5	14.29%	1	3.22%	2 (2.98%)

Note: n = 67

Frequency of Use of Electronic Resources

Users were asked to mention the frequency of the usage of electronic resources with four options frequently, occasionally, sometime and rarely. 59.70% of the respondents indicated they frequently use the electronic resources. 10.44% respondents replied that they occasionally use the electronic resources and 19.40% stated sometime, However 7.46 % respondents rarely use the electronic resources while 2.98% respondents states that they never used the e-resources. Table shows the slight difference in frequency of usage of electronic resources between faculty members of humanities, social sciences and science.

(Table: 2 Frequency of Using e-Resources by faculty members)

Frequency of use	Humanities and Social Science N=38	%	Science (N) N=29	%	Total
Frequently	28	73.68%	22	75.86%	40 (59.70%)
Occasionally	5	13.15%	4	13.79%	7 (10.44%)
Sometime	3	7.89%	2	6.89%	13 (19.40%)
Rarely	1	2.63%	1	3.44%	5 (7.46%)
Never	1	2.63%	0	--	2 (2.98%)

Note: n=67

Purpose of Using Electronic Resources

With the questionnaire respondents were asked the purpose of using electronic resources, in open ended questions, six reasons were enlisted with more than one option to choose. 42.64% of the respondent used e-resources in research and development activities and equally 73.52% using them for teaching & lecture and literature search purpose. 44.11% respondents were in support of study and update. As far as purpose using e-resources in different discipline are concern 66.67% science faculty members use them to do literature search, 66.67% use them for teaching and lectures purpose followed by 63.34% for research and development purpose. However 20% use them to for study and update purpose.

Table No: 3 Purpose of using Electronic Resources by Faculty Members

Purpose of using e-	Humanities and Social Sc	Science (N)			
---------------------	-----------------------------	----------------	--	--	--

resources	N=38	%	N=30	%	Total
Literature Searching	30	78.94%	20	66.67%	50 (73.52%)
Study and Update	24	63.15%	6	20%	30 (44.11%)
R & Development Activities	10	26.31%	19	63.34%	29 (42.64%)
Project & Assignments	3	7.89%	7	23.34%	10 (14.70%)
Teaching & lectures	30	78.94%	20	66.67%	50 (73.52%)
Any other				--	--

Note: n=68

Search and Retrieval in Electronic Resources

The data depicted below in table summarizes that respondents preferred Boolean operators in search and retrieval, while 91.04% of the respondents preferred simple search and interestingly 100% of the respondents opted Boolean search method while searching the electronic resources. None of the respondent opted command level search and retrieval. As far as using proximity search is concern only 8.95% of the respondents stated they use this method for search and retrieval of electronic databases and 28.35% of the respondents mentioned the use of wild card search. It is surprisingly that 46.36% science faculty uses the wild card while 62.5% use the truncation method. None of the faculty members in humanities opted wild card and truncation searches.

Table no: 4 Search and Retrieval method used in Electronic Resources

	Humanities & Social Sc N = 35	%	Science (N) N = 32	%	Total
Menu driven Search					
Wild cards	10	28.57	9	47.36	19 (28.35%)
Selectable truncation	10	28.57	20	62.5	30 (44.78%)
Boolean operator	35	100	31	96.87	67 (100%)
Proximity function	2	5.71	4	12.5	6 (8.95%)
Simple search in all field	30	85.71	31	96.87	61 (91.04%)

Command language interface	0	0	1	3.12	1 (1.49%)
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n = 67

Method of Learning E-Resources

In order to understand the method of using e-resources users were given five option i.e. workshop, tutorial, printed manual, one to one or any other, the table depicted below summarizes that 62.5% of the respondents learnt by own, while 31.25% learnt with the help of friends or colleagues, while 4.68% of the respondents stated they learned with the help of library staff. Interestingly only 1.56% of respondents stated they learnt the use of e-resources by trial and error.

(Table No- 5 Method of using e-Resources by Faculty Members)

Method of learning	Humanities and Social Sc N = 36	%	Science N= 28	%	Total
Own Learning	20	55.56%	16	57.14%	40 (62.5%)
With the help of friend or colleague	12	33.34%	9	32.14%	20 (31.25%)
Help of Library staff	4	11.12%	2	7.14%	3 (4.68%)
Trial and error	0	---	1	3.57%	1 (1.56%)
Any other	----				--

Note: n=64

Rating the Quality of Electronic Resources

Survey listed ten types of e-resources and respondents were asked to rate the quality of electronic resources available through library portal, four options were given excellent, very good, good and poor. Table depicted below shows that majority of respondents 52.38% agreed that quality of N-LIST resources are excellent while 39.68% rated very good. 60% respondents rated Institutional repository good and 30% rated excellent. 53.96% of the respondents rated video library as excellent, while 38.09% rated it very good. Majority of respondents 50% rated CD-ROM contents good. However, 50% respondents rated the e-news clippings very good. Some open source e-books listed on the website were rated excellent by 33.33% respondents and 44.66% stated that e-books are good.

Table no. 6 Rating the Quality of Electronic Resources by Faculty Members

Type of e-resources	N	Excellent	Very Good	Good	Poor

E-books	60	20 (33.33%)	15 (25%)	25 (41.66%)	--
e-journals	63	28 (44.44%)	20 (33.33%)	15 (23.80%)	
e-theses and dissertation	63	20 (31.74%)	15 (23.80%)	25 (39.68%)	3(4.76%)
N-LIST	63	33 (52.38%)	25 (39.68%)	5 (7.93%)	-
Knowledge Gateway	50	15 (30%)	30 (60%)	5 (10%)	
Institutional Repository	60	20 (33.33%)	23 (38.33%)	17(28.33%)	
Video Library	63	34 (53.96%)	24 (38.09%)	5 (7.93%)	
CDROM Contents	60	15 (25%)	30 (50%)	5 (8.33%)	10 (16.67%)
Online open access reference sources	60	17 (28.33%)	18 (30%)	25 (41.66%)	
e-news clippings	30	5 (16.66%)	15 (50%)	15 (50%)	

Note: Respondents could choose multiple options.

Web Based LIS Services used through Portal

Faculty members of the college were asked to reveal the services they use through the library portal, as shows in the table below 91.04% of the respondents mentioned that they use online catalogue, while 89.55% stated they use online journals. However, 50.74% respondents indicated they use gateways. As expected 89.55% of the respondents expressed they use internet services. 89.55% of the respondents stated they use the journals and only 34.32% of respondents stated they use the reference service through library portal.

Table: 7 Web based Library and Information Services used by Faculty Members through Portal

Services	Humanities and Social Sc n=35	%	Science n=32	%	Total
Internet Services	34	97.14%	26	81.25%	60 (89.55%)
LIST serve / Discussion form	5	14.28%	7	21.85%	12 (17.91%)

Internet search engine	37	55.22%	20	62.5%	60 (89.55%)
Library Online catalogue	37	55.22%	24	35.82%	61 (91.04%)
Ask a Librarian	10	14.92%	10	31.25%	20 (29.85%)
Bibliographic databases	16	23.88%	15	46.87%	31 (46.26%)
In-house databases	10	14.92%	4	12.5%	14 (20.89%)
Gateways	20	29.85%	14	43.75%	34 (50.74%)
Reference Service	12	34.28%	11	34.37%	23 (34.32%)
Journals	36	53.73%	24	75%	60 (89.55%)
Any other online access					

Note: n for total = 67

Training in Use of Electronic Resources

Data revealed that majority of faculty members i.e. 74.62% of the respondents need training to use journals portals while 25.38% of the respondents replied that they don't need training to use e-resources. When asked to respondents about method of training, table summarizes (8 b) below indicate that 11.29% stated tutorial method should be adopted for training of e-resources while 24.19% stated lecture method and 64.51% responded that workshop should be organized to train faculty members in using electronic resources.

Table: 8 (a) Training to use Electronic Resources by Faculty members

Training required	Humanities and Social Sc n = 35	%	Science n = 32	%	Total
Yes	30	85.71%	20	62.5%	50 (74.62%)
No	5	14.28%	12	37.5%	17 (25.38%)

n = 67

Mode of Training

Table: 8(b) Mode of Training of using Electronic Resources

Mode	Humanities and Social Sc N=35	%	Science (N) N=27	%	Total

Lecture	10	28.57%	5	18.51%	15 (24.19%)
Workshop	20	57.14%	20	74.07%	40 (64.51%)
Tutorial	5	14.28%	2	7.40%	7 (11.29%)
One to one	--		-		--
Printed Manual			-		

$n = 62$

Conclusion

In web based environment, role of library and information professionals have changed altogether, their role is not just as custodian of books but to teach the students how to use the existing resources, frequently organizing workshops, book talks, debates, develop web based contents and provide web based service to its client. Library professionals cannot ignore the changes in the field of ICT and redefining as well as reengineering the library and information services is the need of the hour. Information professionals must change the way of managing documents with latest tools and technologies. Professionals must have competencies to create web pages, how to build up institutional repository. Library staff has to give instruction, training to users to promote optimum use of information sources. In the digital environment, the information seeking pattern of the faculty members and students has changed and through web based library and information services institutional repository, knowledge gateway, web opac and other web based services in the St. Stephen's College Library provide users about latest updates at their desktop. The survey results reveal that majority of the faculty members are aware about the e-resources, most of them desired training to use the available resources through workshop and lecture methods. Most of the respondents rated N-LIST resources very good. It is observed that most of the faculty members are satisfied with video library contents and half of the respondents rated them excellent. It is the right time for library professional to come forward firmly and convert the traditional library into teaching library providing organized training to use e-resources to users.

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References

- Ali, N. (2005). The use of electronic resources at IIT Delhi Library: A study of search behavior. *The Electronic Library* 23(6): 691-700.
- Ani, O.E., & Ahiauzu, B. (2008). Towards effective development of electronic information resources in Nigerian university libraries. *Library Management* 29(6/7): 504-15.
- Barrett, A. (2005). The information-seeking habits of graduate student researchers in humanities. *Journal of Academic Librarianship* 31(4): 324-31.

Borrego, A., Anglada, L., Barrios, M., & Cornellias, N. (2007). Use and users of electronic journals at Catalan universities: The results of a survey. *Journal of Academic Librarianship* 33(1): 67-75.

Caswell, J.V., & Wynstra, John D. (2010). Improving the search service: Federated search and library gateway. *Library Hi-Tech* 28(3): 391-392.

De Jager, K. (2002). Impacts and outcomes: Searching for the most elusive indicators of academic library performance. *Meaningful Measures for Emerging Realities, Proceedings of the 4th Northumbria International Conference on Performance Measurement in Libraries and Information Services 2001*. Washington, DC: Association of Research Libraries: 291-7

Dowler, L., & Farwell, L. (1996). A bridge to the library of future. *The Gateway*: 1-19.

Gassman, B. (2009). Key challenges in Web analytics. Gartner Group. Available: http://www.gartner.com/DisplayDocument?doc_cd=169145

Bright, G.C., Hurlbert, T., & Linke, E.C. (2006). Scholarly use of information: Graduate students' information seeking behavior. *Information Research* 11(4). Available: <http://InformationR.net/ir/11-4/paper272.html>

Goodall, D., & Pattern, D. (2011). Academic library non/low use and undergraduate student achievement: A preliminary report of research in progress. *Library Management*. 32(3): 159-170.

<http://www.library.ststephens.edu>

<http://www.ststephens.edu>

<http://www.ugc.ac.in>

Jewell, T.D. (2001). Selection and presentation of commercial available electronic resources: Issues and practices. Washington, DC: Digital Library Federation and Council of Library and Information Resources. Available: <http://www.clir.org/pubs/reports/pub99/pub99.pdf>

Min, S., & Yi, Y. (2010). E-resources, services, and user surveys in Tsinghua University Library. *Program: Electronic Library and Information Systems* 44(4): 314-327.

Monopoli, M., Nicholas, D., Georgiou, P., & Korfiati, M. (2002). A user-oriented evaluation of digital libraries: A case study of electronic journals service of the library and information service of the University of Patras, Greece. *ASLIB Proceedings*, 54: 103-17.

Nabe, J.A. (2010). *Starting, strengthening, and managing an institutional repository; A how to do it manual*. New York: Neal-Schuman Publishers Inc: 29-45.

Nokatani, K. (2011). A Web analytical tool selection method: An analytical hierarchy approach. *Internet Research* 21(2): 1-18.

Online Computer Library Center (OCLC) (2002). Academic librarians can influence students' Web based Information choices. OCLC white paper on the information habits of college students. Available: <http://www.oclc.org/downloads/community/informationhabits.pdf>

Sadesh, T., & Ellingsen, M. (2005). Electronic resource management systems: The needs and realization. *New Library World* 106 (5/6): 1-12.

Sampath Kumar, B.T. (2010). Perception and usage of e-resources and the

Internet by Indian academics. *The Electronic Library* 28(1): 137-155

Shuva, N.Z., & Banerjee, T. (2010). Implementing instant messaging (IM) reference service in some selected university libraries of Bangladesh. *ISST Journal of Advances in Librarianship* 1(1): 15-24.

Solis, J., & Hampton, E.M. (2009). Promoting a comprehensive view of library resources in a course management system. *New Library World* 110(1/2): 81-91.

Swain, D.K. (2010). Students' keenness on use of e-resources. *The Electronic Library* 28 (4): 580-591. Available: www.emeraldinsight.com/0264-0473.htm

Wilkinson, J. (2008). Using technology in learning. In Dowler, L. (Ed.). *Gateways to knowledge: The role of academic libraries in teaching, learning and research*, MIT Press: 30-50.

Zhang, L., Ye, P., & Qihua, L. (2011). A Survey of the electronic resources in seven universities in Wuhan, China. *Program: Electronic Library and Information Systems* 45(1): 60-69.