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# INFORMATION LITERACY IN HIGHER EDUCATION

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## ABSTRACT

In a knowledge society, information literacy is essential for individuals in their life long learning process. Along with defining literacy and information literacy this paper defines some of the related concepts like business literacy, computer literacy, health literacy and media literacy. Role of information literacy in higher education and the changing role of librarian in the new paradigm with the advances in information and communication technology (ICT) is another feature of the paper.

## Background

The beginning of the 21st century has been designated as the Information Age because of the tremendous explosion of information sources. It has become increasingly clear that students cannot learn everything they need to know in their field of study in a few years of courses. Information literacy equips them with the critical skills necessary to become independent lifelong learners. Life long learning relies on the information skills of learners, and librarians are the information experts who have the key role to facilitate information competencies. Life-long learning and a learning society (or knowledge society) are necessary to sustain the continuous multiple developments of individuals and society in a changing new century (Drucker, 1993, 1995). Information literacy is generally understood by librarians as the development and acquisition of skills and attributes by the individual, which underpin effective learning in educational settings (Bundy, 2004). Librarians should actively contribute to the

learning process of students in their search to enhance or develop their skills, knowledge and values to be learners throughout their lives. In such a context, there is an emerging paradigm shift in education all over the world and this new paradigm emphasizes the development of information literacy in teaching-learning process.

## From Literacy to Information Literacy

The concept of information as we use it in everyday English in the sense *knowledge communicated* plays a central role in today's society. Throughout life, all people are engaged in activities - practical or mental - trying to solve problems, activities that themselves give rise to problems. To solve these problems, people need information.

## What is Literacy?

The seed of information literacy lies in literacy. The basic definition of literacy is, according to the Oxford Advanced Learner's Dictionary (7th edition, 2003) "the ability to read and write". In education parlance, "Basic

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Literacy" means the classic or traditional literacy of learning how to read, to write, to perform numeric calculations and operations.

***Other "Literacy" concepts related to information Literacy***

Information literacy is linked with other types of literacy like business literacy, computer literacy; health literacy and media literacy, but it should be differentiated from them.

- ❑ **Business Literacy** : The ability to use financial and business information to understand and make decisions that help an organization to achieve success.
- ❑ **Computer Literacy** : The knowledge and skills necessary to understand information and communication technologies, including the hardware, the software, the system networks (both local area network and Internet), and all other components of information and telecommunication systems.
- ❑ **Health Literacy** : The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.
- ❑ **Media Literacy** : The knowledge and skills necessary to understand all of the mediums and formats in which data, information and knowledge are created, stored, communicated, and presented, i.e. print newspapers and journals, radio and television broadcasts, CD-ROM, DVD, mobile telephones, PDF text formats, and JPEG format for photos and graphics.

**Information Literacy**

Attempts to define "Information Literacy"

(IL) have been made for several years and there are more similarities and dissimilarities in these definitions. The most commonly cited and used IL definition is the one adopted by the American Library Association (ALA), 1998. "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. The information literate individuals are those who have learned how to learn." They know how to learn because they know how knowledge is organized, know how to find information, and how to use information in such a way that others can learn from them. Whatever semantics we assume for the IL term, the ALA definition, itself is broad enough to encompass the entire spectrum of information skills. A competent citizen, whether a student, a professional or a worker is able to recognize his/her information needs, knows how to locate, identify access, retrieve, evaluate, organize, and use information. To be an information literate person, one has to know how to benefit from the worlds of knowledge, and incorporate the experience of others into one's background. Information literate people

- recognize a need for information;
- determine the extent of information needed;
- access information efficiently;
- critically evaluate information and its sources;
- classify, store, manipulate and redraft information collected or generated;
- incorporate selected information into their knowledge base;
- use information effectively to learn.

- create new knowledge, solve problems and make decisions;
- understand economic, legal, social, political and cultural issues in the use of information;
- access and use information ethically and legally;
- use information and knowledge for participative citizenship and social responsibility;
- experience information literacy as part of independent learning and lifelong learning;
- ability to decode information in a variety of forms: written, statistical, graphs, charts, diagrams and tables; and
- critical evaluation of information.

#### **Information Literacy and Life-long Learning**

Information literacy and life long learning have been described as the backbone of the information society. Information literacy empowers people in all walks of life to seek, evaluate, use, and create information effectively to achieve their personal, social, occupational and educational goals. UNESCO's Information for All Programme seeks to raise awareness of the importance of information literacy for lifelong learning.

Information literacy is intimately connected with lifelong learning. Its profile of the lifelong learner included the following information literacy qualities or characteristics (Candy et al. 1994):

- knowledge of current information resources available in a given field of study;
- ability to formulate research questions in a given field of study;
- ability to locate, evaluate, manage and use information in a range of contexts;
- ability to retrieve information using a variety of media:

Information literacy is common to all disciplines, to all learning environments, and to all levels of education. Information literacy requires sustained development throughout all levels of formal education, primary, secondary and tertiary. It enables learners to engage critically with content and extend their investigations, become more self directed, and assume greater control over their own learning.

#### **Information Literacy and Higher Education**

In view of the emerging network environment, in view of the fundamental shift in goals of the library, and in view of the changes in information storage and delivery mechanisms, the higher education programmes should cater to the needs of these changed setting by including in their course contents, the knowledge and skills required to function effectively in such an environment. Under this objective condition, the need for incorporation of information literacy in the curricula of different disciplines was strongly felt. Obviously, the whole spectrum of information literacy programme would vary from country to country depending on their political structure, national traditions and education systems in which they function.

The central theme of higher education institutions in many parts of the world is to develop lifelong learners with the intellectual abilities of reasoning and critical thinking. The

kernel idea is to motivate students to have more inquisitiveness through independent learning. Information literacy is necessary to this effort because independent learners need to know how to access, collect, evaluate, synthesize, and report information that is important to the tasks at hand. Students can maximize their learning opportunities from local and global exposures through the Internet. Web-based learning, video-conferencing, cross-cultural sharing, and the use of different types of interactive and multimedia materials. Students can learn from world-class teachers, experts, peers, and learning materials from different parts of the world. In other words, their learning can be a world-class learning.

### Library and Information Literacy

It is now recognised all over the world that the libraries are integrated part of teaching and learning activities. Library and information resources and services contribute to developing the ability of students, faculty, and staff to use the resources independently and effectively. Faculty and librarians are required to collaborate with each other to ensure that students use library resources, in addition to course texts, as a part of the learning process. "Evaluation and Assessment" must include two library

measures: 1. Use of library and learning resources and instructor assignments that require such usage; and 2. the extent to which students use library and learning resources appropriately.

A number of recent trends in higher education raise questions about the adequacy of the traditional approach to library services. Advances in information and communication technology (ICT) have created new dimensions to library collections as well as alternative sources of information like the use of online catalogues, full-text databases, e-books, multimedia information, and Web sites. Since most faculties find it difficult to keep up with the rapid growth in electronic information sources, librarians need to assist both students and faculty about these new sources.

These trends call for the transformation from a narrow focus on bibliographic instruction service to the newer concept of information literacy. While traditional library instruction concentrated upon library resources and library tools, information literacy goes beyond those confines to deal with information in any format located anywhere. The following table provides a view of new paradigms of library instruction in contrast to its traditional view:

Traditional Library Instruction (Narrow View)		New Paradigm in Library Instruction ( Information Literacy view)	
Activities	Agent	Activities	Agent
1. Identifies the focus of the research topic	Faculty	In addition to the traditional library instruction activities listed under sl. nos. 1 to 11; 12. Teaches how to determine the information	Faculty
2. Identifies sources of background information	Librarian		Librarian
3. Teaches how to search			Faculty

Traditional Library Instruction (Narrow View)		New Paradigm in Library Instruction ( Information Literacy view)	
Activities	Agent	Activities	Agent
library catalog	Librarian	needed	
4. Teaches students about search terms	Librarian	13. Instructs students about research methods	Faculty-Librarian
5. Instructs how to search periodical literature	Librarian	14. Teaches students about scholarly communication	Faculty-Librarian
6. Identifies key references	Librarian	15. Teaches students about information technology	Librarian
7. Teaches how to cite sources and create bibliography	Faculty-Librarian	16. Instructs students broadly about how to evaluate print and electronic information sources	Computer Centre Staff
8. Teaches library classification schemes	Librarian	17. Teaches students about economic, political, legal and cultural context of information	Faculty-Librarian
9. Informs students about library services (reference, ILL, etc.)	Librarian	18. Teaches students about how to evaluate information content	Faculty-Librarian.
10. Informs students about popular and scholarly literature	Librarian	19. Teaches students how to synthesize information	Faculty-Librarian
11. Instructs students how to develop search strategies	Librarian	20. Teaches critical thinking skills	Faculty-Librarian
12. Teaches how to determine information needed	Faculty	21. Teaches problem solving skills	Faculty-Librarian
13. Instructs students about evaluating information sources	Librarian	22. Teaches students about data manipulation and data management	Faculty-Librarian
14. Teaches students about evaluating information content	Faculty	23. Prepares students for lifelong learning, career preparation and professional development	Faculty-Librarian

Librarians are required to expand their horizons and become knowledgeable about important academic Web sites and to acquire necessary knowledge and skills to organize the Internet resources so that students and faculty can get high quality Internet resources for the subjects of their study and research. Topsy Smalley (1998) shows how librarians can fill the gap by working with faculty to teach students about "Internet research." Sonia Bodi (1992) goes a step further in suggesting that librarians must share responsibility with teaching faculty to ensure that students learn critical thinking skills at the appropriate moments in the research process. Libraries in the institutions of higher education must have strong liaison with academic departments to demonstrate to faculty the library's obvious interest in collaborating with faculty in the enterprise of improving the academic environment for education and research (Yang, 2000). Librarians also may contribute to higher education by conducting research about information competencies and creating theoretical constructs that help to understand student learning.

### **Role of Teaching Faculty**

Information literacy must become a central core set of skills for higher education. It needs to be embedded into courses. Teachers must accept some level of responsibility for teaching these skills, whether they teach the skills or a librarian teaches them or they collaboratively develop modules for students to learn these skills. Librarians must become more acquainted with the courses' objectives, pedagogy, and content.

It is important to note here that information literacy is not hitting a hard wall of nonacceptance by all faculty. Many faculty are discovering that the concepts of information literacy are in tune with the competency-based teaching being adopted in their own fields. Both librarians and faculty must look for connections between information literacy and the important concepts in disciplinary education.

Many teaching faculty still rely upon traditional sources of information to teach and advise students in their study and research. But, there has been tremendous change in academic publishing and ICT during the last two decades, resulting in an explosion of new sources and new approaches to conducting information searches in most fields. Many faculty feel increasingly uneasy about the resources that students may use for doing library research. The logical solution is either to give more of the responsibility for teaching information competencies to librarians or to provide continuing education to the faculty. R. L. Smith (1997) states the preferred option clearly:

Faculty controls the learning environment and is in a better position than library faculty to create situations which allow students to see information seeking as an essential part of problem-solving in a discipline. The time has come to shift our focus from students to the faculty--to teach the faculty to teach information literacy. (p. 1)

### **Conclusion**

The integrative and holistic approaches to educational reform usually view information literacy and technology as part of the



educational package. These approaches clearly call for a team-approach to curriculum design, recognizing the contributions to be made by educational technologists, librarians, and persons responsible for strategic planning, distance education, as well as many others. The Web is creating opportunities for new ways of collaborating through online guides, instructional modules, exercises, and tests to instruct students and faculty about information literacy concepts and skills. Information literacy is the only solution in this direction.

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# NEWSPAPER INFORMATION RETRIEVAL SYSTEMS: OVERVIEW OF LITERATURE

Goutam Maity\*

## ABSTRACT

Newspapers are important sources of information for research activities as well as for various application activities. Existing newspaper information retrieval systems are suffering from many lacunas. Attempts to comprehend the problems of designing an efficient and effective newspaper information retrieval system for India based on findings of previous researches. Designers of newspaper Information retrieval systems may get proper directions from the observations of this study.

## 1. Introduction

The increasing need and demand for retrospective use of newspaper information, from among the people involved both with the 'research and development activities' and 'application activities', have compelled the information professionals to become more concern towards the problems of newspaper information retrieval. Till date, several printed and manual information retrieval systems have come out as a solution to this problem. But these systems are gradually becoming out of date, since they offer limited scope and facility for searching and retrieval of information. Thus, the specialist users, now, very little depend on them for having their required information. However, a few online digital archiving initiatives for newspaper items, mostly offered by the newspaper establishments, have been found in India. No doubt, these online systems are far better, in meeting users' demands, than their

printed and manual counterparts. Still these are functioning with many lacunas and thereby have failed to cater users' demands. Moreover, these are not up to the mark in view of the state-of-art ICT and the latest trends and developments in information storage and retrieval procedure.

The situation, therefore, has created a strong demand upon the information specialists towards designing an efficient and effective newspaper information retrieval system. Keeping this in view, an attempt has been made, here, to comprehend the problems of designing a digital newspaper information retrieval system, suitable for India through a critical study and analysis of previous researches on the area.

## 2. Objective

The objective of this study is to present an in-depth review of existing literature related

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to the previous researches on newspaper information retrieval systems. To be precise, this review makes an endeavour:

- I) to locate lacunae or gaps in the development of the area;
- II) to identify aspects and facets that have either not been treated or treated insufficiently;
- III) to uncover methodologies that have already been used successfully by other researchers in the area;
- IV) to get new idea or approach on this area of investigation; and
- V) to develop a firmer understanding of the theoretical implications on this area of research.

### 3. Scope and Coverage of Information Retrieval Systems

The indexer should consider the objective of the indexing agency when embarking on newspaper indexing. The scope and coverage of items, to be included in indexing project, is governed by the objective of the parent institution it serves and at the same time the demand of the users. Several contributors (BLANCHARD & NATION; FOSTER; SWANEPOEL; VIERRA & TRICE) have prescribed guidelines for scope and coverage of indexing. WHATMORE (1973b) suggests an information system might cover specific and comprehensive aspect of news or features published by the parent institution plus a catholic selection from the other sources.

In determining scope of newspaper indexing, AFOLABI has two approaches of

which first option is to cover all items appearing in an individual newspaper in the index and the second aims to cover all items on a specific subject appearing in different newspapers in the index. The advantage of the first approach is that information on various subjects can be found in the index, whereas the later approach has the facility to look all items on a particular subject in an index. But JONAK thinks no single newspaper can be considered comprehensive source of information and a particular topic is unlikely to be covered to a sufficient depth in one or a few newspaper articles. In this regard opinion of OKORAFOR (1989) may be found significant which advocates subject indexes to all newspapers, against to individual newspaper. But an index can not cover all the newspapers published throughout the world as it is not convenient and manageable (AFOLABI). Therefore, DOWNER proposes to consider the number of newspapers to be included in the index. But what should be the criteria for selecting newspapers? OKORAFOR (1991) sets following criteria for selecting newspapers: language coverage, geographical coverage, space bias, relevance to curricula, currency, balanced and objective reporting, readers demand, availability of newspaper, and availability of fund. GOYAL & LAL feel the coverage of language must be taken into account when embarking on indexing project. VENKATCHARI suggests the individual newspapers in different languages to take a project to index their own newspapers on language basis for the benefit of the public. AFOLABI asserts geographical coverage is an important factor. It must be decided

whether the indexing project will be one at state, regional, provincial, national or international level. The coverage of subjects to be included in the index, prescribed by AFOLABI, may be agriculture, politics, economy, social welfare, education, transport, family life, armed forces, religion, science, technology, crimes, banking, industries and sports. WHATMORE (1964, 1966, 1970, 1978) thinks their range should be as wide as the news of the day, sport, crime, personalities, foreign affairs, politics, economics and social questions. Another important factor brought into notice by DOWNER is criteria for inclusion of items in indexing. AFOLABI proposes the indexer must decide whether to index every item of information from the newspapers for indexing or be selective in the items to be indexed. Outlining the merits and demerits of both the approaches (i.e. the completeness or selectivity of indexing), leaves the option to adopt to the indexers. The indexer may also decide whether to index cartoons, obituaries, advertisements, news liners, news briefs, etc.

#### **4. Conceptual Analysis**

The first step of subject indexing process rests on conceptual analysis or content analysis (LANCASTER). This is very significant intellectual task. Knowledge about the subject content of the text, and ability to analyse it conceptually are highly essential (AFOLABI). NAZIR AHMAD asserts comprehensiveness and consistency in newspaper indexing depends in effectiveness of subject analysis of the news items. Describes the practical aspects, to be considered for conceptual

analysis, and suggests rules for news analysis, illustrating the techniques dealing with complex and diversified news headings reported at intervals. As the headlines do not always indicate real subject of a news story, the identification of indexable concepts may become ordour and cumbersome. Discusses also the methods skills and capability needed to tackle such problems. SMITH prescribes and discusses guidelines and rules for conceptual analysis and subject heading selection. JAMES sketches the process of scanning newspapers for selecting the relevant headings under which to index each item. BENNETT describes the indexing procedure as a whole.

For efficient conceptual analysis, the indexer needs some comprehension of subject matter of the document, and a good knowledge of the needs of the users of the system. The recognition of what the document is about and why users may be interested in it, that is, what aspects of the document are of most concern, is what constitute the conceptual analysis (LANCASTER).

#### **5. Index Language/Vocabulary**

It is the translation of conceptual analysis into some vocabulary. Index language occupies an important place in indexing. It is the means of representing information. In the majority of systems this involves the use of controlled vocabulary. Such a vocabulary might be a list of subject headings, a classification scheme, a thesaurus, or simply a list of approved keywords or phrases (LANCASTER). Several studies may be mentioned here which have found the

necessity of controlled vocabulary. SULE highlights the unsystematic efforts so far made at indexing and emphasizes the need to compile a comprehensive thesaurus to aid effective indexing. OKORAFOR (1989; 1990) finds that lack of uniformity in the use of vocabulary results in inconsistencies and suggests that the National Library or the library associations of the country should compile and publish index terms to achieve uniformity in indexing. GHOSH feels that manpower involved in indexing should be trained with controlled vocabulary. NAZIR AHMAD, SMITH and JAMES provide guidelines, rules and techniques for subject heading selection and use. In this regard the study of SANYAL & SENGUPTA is worth mentioning. They suggest the index terms must be precise, unambiguous and internationally accepted, at least acceptable to the disciplines to which they are concerned. The vocabulary should be controlled to prevent duplication under synonymous headings. Technical jargons need to be avoided in favour of common terms. In some exceptional cases, much used technical terms may be adopted. HOWARD and GREENGRASS explain the process of organizing a thesaurus with newspaper specific vocabulary. Lane Memorial Library in Hampton, New Hampshire has developed a thesaurus in-house for subject indexing of local newspapers on its web site (MENK). GREENGRASS considers the needs for higher volume, greater diversity, consistency, filling in missing words, limited use of terms, currency, the belated creation of terms and careful handling of large concepts in the construction of a computerized current affairs thesaurus. FARQUHAR finds the need to produce an on-line thesaurus for on-line full-text retrieval of newspaper items. MANTWILL has explored the possibilities of using electronic data processing for data interchange with other institutions alongside controlled vocabulary and information classification and finds solutions with the right software systems. OKORAFOR (1989) and SHOLTYS make their opinion in favour of adopting Library of Congress Subject Headings for newspaper indexing with necessary modifications without losing the benefits of user's familiarity. The changes can be divided into two types: variations in the LC material itself; and terms originating outside the LCSH listing. KRISSIEP feels, since there is no Library of Congress Classification Schedule for Newspapers, an LC like schedule of terms should be developed. For ease of use, it should be arranged alphabetically by country with 13 major geographical regions, with optical expansion for some countries with schedule and/or appendices. WHATMORE (1973a) makes a critical discussion of classification and indexing of news information in news libraries. ROERTVEIT has developed AVISINFORM, a newspaper information retrieval system, and finds DDC suitable for building subject heading using the chain indexing procedure. AFOLABI has prescribed Thesaurus Africana, a thesaurus of terms used in African newspapers and magazines for newspaper indexing. WHATMORE (1973b) asserts no satisfactory universal thesaurus or list of subject headings for current affairs has yet emerged due to the nature of subject matter

which, by definition, is new and unformed. Feels that the thesaurus, in fact, is not sufficient alone and therefore, it must be supported by detailed guidelines for the treatment of specific cases. Further, much more work remains to be done in subject classification for current affairs.

Besides controlled vocabulary, index language can be derived from the text, that is uncontrolled vocabulary. MISCHO has produced a computerized newspaper index where indexer is required to select subject descriptors from natural language terms or phrases appearing in the headline or text of a newspaper article. Feels that this process is cost competitive and provides a more effective retrieval system. O'DONNELL & SMEATON concentrate on the lexical and syntactic levels of natural language analysis and describe a domain independent automatic information retrieval system which accesses a very large database of text from the newspaper. While, CABO & LLAVORI present a new application of retrieving news from electronic databank. The proposed system intends to use a document definition language and a temporal document retrieval language. However, AFOLABI feels this approach has the merit of basic index language on the terms arising from documents but has the disadvantage of resulting in the use of uncontrolled vocabularies. MEADOW suggests that the index language should be designed to suit the recognizable classes of users, rather than for all users.

## 6. Indexing Techniques

Several information retrieval systems have been found functioning, using different

indexing techniques. KAVANAGH describes favouring the decision to adopt a computerized information retrieval system through the use of KWIC. Outlines the great success of KWIC which makes indexing swift, accurate and economical. Users are able to retrieve more information in far less time in this system than a card index. MISCHO finds that a computer produced index in KWOC format, is cost competitive and provides a more effective retrieval system in comparison with a card file system. Based on the findings drawn from a comparative study of manual and computerized indexing procedure, UDO-ROH recommends the KWAC index, using a microcomputer for newspaper indexing in developing countries. ROERTVEIT suggests an information retrieval system for newspapers should use the chain indexing method for building up subject index. A comparison of subject indexing of newspaper articles by PRECIES and KWIC, conducted by MADELUNG, indicates PRECIES index producing more correct answers and fewer wrong answers than the KWIC index, i.e. it has both better recall and greater precision. Further more, the students are found more confident in their judgment of the relevance of retrieved articles in the PRECIES index than in the KWIC index; and they generally favour the PRECIES index in the subjective judgment, they were asked to make. After evaluating the indexing of a sample according to subject heading methods used in Library Literature, Library and Information Science Abstracts, PRECIES, and a co-ordinate indexing (i.e. TERMATREX), BURGER & STINNES have found the co-ordinate

indexing as appropriate system, and the TERMATREX system has been recommended to use for information retrieval purposes. SWANEPOEL finds a newspaper index, prepared through the use of UNITERM index system, may help the researchers, research institutions and other organizations in seeking newspaper information and can effect savings in manpower, storage space, and time.

### 7. Retrieval Software

In designing a computerized information retrieval system, the role of software is crucial. Several studies have been found discussing the use of software in indexing of newspaper materials. In an attempt to modernize the information services, MANTWILL explores the possibilities of using electronic data processing for data interchange with other institutions alongwith questions of keyword indexing, controlled vocabulary and information classification and remarks some solutions could be found with right software system. SCHUYLER reports on a project to study the feasibility of newspaper indexing using a micro computer and IND-EX software. SEMONCHE describes a case study of a newspaper indexing, using a computer and IND-EX software conducted by the Durham (North Carolina) Herald-Sun Newspaper Library. This computerized index aims at providing libraries, schools and business houses with access to information contained in newspapers. LIST ET AL. have produced an index with the help of computer and CIRCEL software. It can perform permutational indexing, which results in the user being able to recognize

subject connections and to exclude irrelevant material when checking the index, an early stage in the search. Permutational indexing permits the creation of many different indices without program alteration or adaptation. CIRCEL has been designed for handling data stores with a maximum of 10,000 keywords which makes the searching of microfiches particularly easy. No special technical knowledge is needed to operate the program. ANDERSON favours SAVVY as the database program to run on IBM PCs. The program is used to generate an in-house index to the local weekly newspaper, the Northbrook Star. WALL reports on how Murry State University Library, a medium sized academic library, has made use of an IBM mainframe computer and SCRIPT, a text formatting program, to index local newspapers. The process is one that can be adopted with a microcomputer and word processing software. JONES-RANDALL describes the project, carried out at Weston Public Library, Massachusetts, producing an index to the local newspaper, Weston Town Crier, using the INMAGIC indexing and searching software. KNEE examines the capabilities of the UNIVAC 110/82 text editor for generating a local newspaper index. Discusses the facilities of data input, error correction and entering updates. The index in its final form lacks two important features, page number and headers, and entries can not be re-formatted, costs are not exorbitant. Finally, comments that this program can not be recommended for newspaper index.

FLOWER & MENCHEN give instructions

for using the command files of dBase II to create a simple newspaper index, while KILCULLEN & SPOHN and WHARTON, in their respective studies, discuss the design and creation of index, using dBase IV. HOWARD describes the search system for electronically stored documentation developed by Information Dimensions and installed at Axel Springer, the German newspaper publisher. The system uses BASISPLus for managing and accessing an archive of press cuttings. Explains the organization of the keyword search index and a thesaurus with newspaper specific vocabulary. BASISPLus provides the benefits of SGML. CRAMER & MARKLAND have developed an innovative indexing method with the objectives of stronger and easier subject access to local newspapers and the creation of an index which can store information compactly and economically. Discuss the decision to use Pro-Cite software and describe the creation of 10 areas data base file. Outline two areas of difficulty, documentation and terminology. HANCOCK-BEAULIEU & HOLLAND and HANCOCK-BEAULIEU describe a computerized index and database project for the reviews and reviewers of the Athenaeum Predecessor of the New Statesman. The database is being mounted on a Pc using TINman, a relational DBMS software package. The initial objective is to publish a printed index but the design is taking into account further facilities for the development of an online interactive research tool for researchers in the humanities. GOODWIN describes the application of AGENDA, a personal

information manager software package designed by LOTOUS Development Corporation, to the organization of full text database of news articles online at the Royal Bank of Canada. The software creates categories and has the ability to recognize phrases in text as the text is input, either from the keyword or as an ASCII input. If a phrase or word is recognized, the AGENDA creates a link between that item of text and the category in question. AFOLABI describes the application of CINDEXT, a software package which has been designed for preparing indexes to newspapers. The software can also be used to prepare glossaries and subject authority lists based on existing indexes. ARORA & GOYAL explain in detail the creation of an index to press clippings in the field of high temperature superconductivity as an experiment using CDS/ISIS package on PC/AT. Input output format designs are explained, and different outputs referring to work done in India and other countries, in specific institutions, specific names of scientists involved in the work, etc. are obtained. For the creation of company, people and advertiser name indexes, Carnegie Group provides the Name Finder software which supports application development of newspaper and online database index creation (HAYES & KOERNER). OCLC plans to digitize historic newspapers for preservation and to provide access to these in the web. The software used for this purpose, called Olive Software, can save time and cost enabling browser based user friendly access to search retrospective newspaper collections.



It can build index to every news item, photograph, and page, enabling newspapers in print or microfilm to be quickly and easily converted to digital format and delivered back to the library to make accessible via its own web site. Lane Memorial Library in Hampton, New Hampshire, created a publicly accessible index to its local newspapers on its web site. Indexing work is done using Filemaker Pro software (MENK). YEONG has provided an overview of the application of the Library, Archive, Search and Retrieval (LASR) software, developed by System Integrators, Inc., at the Straits Times Press for archiving and retrieval of newspaper information in a library. MATORIA ET AL. have designed a software, called NewsNic, for web based full text retrieval of news items in NIC Library, India. Apart from the above, JACSO has described the users of DIALOG OnDisc software for finding statistical information from newspapers and periodicals in CD. Whereas, BRADLEY has described on My Yahoo! an intelligent search engine software, BLAKE (1997) discusses on Reuters News Explorer and its search engine, Muscat and BLAKE (1996) gives an overview of AgentWare, a scanning software.

### 8. Storage Media

A newspaper index can be produced in formats like: book, card, microform, and computerized. The use of indexes produced on cards tends to be restricted to the library or one place, whereas, if produced in book form, that is, if cyclostyled on stencils or printed, they can be circulated widely. In computerized indexes, the computer itself

holds the indexing records in files, the user may search the computer screen or obtain the index in paper or microform (AFOLABI). WHATMORE (1973b) finds the traditional indexes on cards with comprehensive abstracts as sufficient for internal purposes. NDAU describes the methods of producing newspaper index in card form. SCHMIDT & JANDA & GORDON find one specific development in information technology which provides a relatively low cost but highly effective solution to the problem of newspaper information storage. This technology uses microfilms to store both the clippings and the index codes that describes the clippings. Several studies (BRAUN; ZESKY; DAS; HIGGENS; KING; RIKER) are found expressing opinion in favour of microfilm for storage and retrieval of newspaper information. SWANEPOEL comments that microfiche services of newspaper information can effect savings in manpower, storage space, and time. MOONEY compares advantages and cost of microfilm and computer based storage systems and makes opinion in favour of computerized information storage and retrieval system. Several studies may be cited (KAVANAGH; MANTWILL; WALKER) here that have set opinion in favour of computerized information storage and retrieval systems. STEEMSON expresses experiences with OPAL system where newspapers are scanned onto optical discs and index in batches at indexing workstations. CARNEY describes Information Access Company's development of a range of databases on optical discs. ROERTVEIT describes

experience with AVISINFORM project where the newspaper information retrieval system is to be a free text system based on full text storage. A study made by AKULA & PIESKA has tried to investigate the feasibility of current microfilm digitization and optical character recognition techniques in generating full text indexes for newspaper collections. PURCELL describes the News Bank Electronic Index, a computerized newspaper index stored on CD-ROM and searchable by IBM Pc microcomputer and Hitachi CD-ROM disc drive. DAVID describes experiences of using CD-ROM and welcomes the advent of full text databases on CD-ROM. ARUNDALE reviews the advantages of CD-ROM storage media for newspaper databases. Apart from the above, MAYS assesses comparative advantages and disadvantages of different storage media: paper, computers, microforms and visual media.

### 9. Searching and Retrieval

Searching is the process of locating documents and items of information that have been committed to store. In searching, a searcher describes his/her subject of interest in concise terms, which he/she regards as headings likely to be found in an index (ROWLEY). A study made by MORRISON (1986) tries to make comparison of two main indexes of The Times newspaper: Palmer's Index to The Times newspaper; and The Times Index. Results indicate the superiority of searching The Times Index and problems encountered in searching Palmer's Index. Another evaluation and comparative analysis of the

palmer's Index to The Times newspaper, and The Times Index, two notable indexes to The Times of London made by MORRISON (1987) has found same results as noted in the earlier study. After evaluating the indexing of a sample according to subject heading methods used in Library Literature, Library and Information Science Abstracts, PRECIS, and coordinate indexing (Termatrix, a thesaurus developed for indexing and searching), BURGER & STINNES have found coordinate indexing, Termatrix to be most useful for retrieval purposes. A comparison of PRECIS and KWIC indexes to newspaper articles made by MADELUNG shows that the PRECIS index has both better recall and greater precision. Furthermore the users find more confidence in their judgment of the relevance of retrieved articles in the PRECIS index than in the KWIC index. KAVANAGH makes a comparison of computerized information retrieval systems and manually prepared card index systems and concludes that in computerized system users are able to retrieve more information in far less time than in card index. Study made by MISCHO indicates that computer produced index in KWOC format, is cost competitive and provides a more effective retrieval system than card file system. A feasibility study to investigate the viability of producing an index to newspapers has been done by HINDSLEY, the result of which would be used for database development and on-line information retrieval practices. JAAFAR & JAAFAR describe MALMARC project and STEEMSON (1990) discusses OPAL system which offer

on-line access to databases. ROERTVEIT discusses experience with AVISINFORM project from which newspaper information will be available on-line through field searching. GARFIELD compares the use of the Internet for selective dissemination of information (SDI) by comparing web searches via Alta Vista with similar searches on CD-ROM. GRASSIAN & ZWEMER provide an overview of databases to which the MELVYL system provides access. Discuss effective search strategies and outlines users reactions after one year of use. DANKY discusses experiences with OCLC that provides access to bibliographic records responding the user and librarian demands. The OCLC holds much promise for the library profession, especially in terms of subject access. ROSS and MILSTEAD discuss on the features of cross file searching in an online environment. SOVNER-RIBBLER describes cross-file searching in the Information Access Company (IAC) databases which contain information to support research in the areas of business and industry, current affairs, consumer interests and the law. WEST provides an on-line user's guide to Information Access Company (IAC) databases. BLAKE (1994) makes a discussion on UMI Document Delivery System through which users will be able to search UMI abstracts and index databases, either on-line or locally. FARQUHAR illustrates experiences with Data Times which offers on-line full text retrieval facility from databases of newspaper items. PACK briefly notes the on-line databases that may be used to search for the kind of short stories in newspapers. PURCELL describes searching the News Bank Electronic Index, a newspaper index stored on CD-ROM. CD-ROM newspaper databases have advantages over their printed and on-line equivalents where searches can be quicker, and more thorough results can be printed, and the user has unlimited access at fixed costs (JAFFURS). PETERS discusses the advantages of CD-ROM and different searching methods, with and without mediator. Examines special features, such as those which aid end user searching. A study of users adaptation in an interactive database search system, conducted by MEADOW, concludes that index language should be designed to suit the recognizable classes of users, rather than users as a whole. A significant attempt done by O'DONNELL & SMEATON on domain independent automatic information retrieval provides an exceptional approach in this direction. Another notable work has been presented by OCLC that provides browser based user friendly access and searching options to retrospective newspaper collection. TENOPIR and HOGAN mention some databases that provide on-line access to newspapers in their complete text or to indexes or abstracts. GARFIELD compares the use of the Internet for selective dissemination of information (SDI) by comparing web searches via Alta Vista with similar searches on CD-ROM. Besides, many studies have attempted to throw light on searching strategies and features of searching in various web sites providing newspaper information (DIAZ ET AL.; BLAKEMAN; KLUGKIST; PAUL (1996a,1996b); YEONG; KRUMENAKER

& HURST). As to the functions of the search engines in searching and retrieval of information in web environment, GARCIA & GONZALEZ have made a qualitative analysis of some search engines. Some other studies have also attempted to comprehend the features of search engines in searching and retrieval of newspaper information (BLAKE (1996, 1997) ; BRADLEY; WEBBER).

### 10. Conclusion

An in-depth study and critical analysis of the observations, revealed through the previous researches concerned with the problem/area of this research, brings out a number of notable findings that may come to help in reaching our target. Particularly in India, very few attempts have been found to deal with retrieval of newspaper information. On the other hand, the global phenomenon is just opposite to this, wherefrom a large number of papers have come out on this area. However, designing of a retrieval system based on a sound theory and methodology that urges to employ a strategy covering a systematic and comprehensive study of source literature (i.e. the materials that are to be included in the system), newspaper information users, and the performance of the existing retrieval systems is quite rare. Besides the above observations, this review has helped significantly to narrow and grip tightly this research area. It has also helped to locate gaps and lacunae, identify unexplored facets in the area of research, and to know the state-of-the-art methods and technologies available and implemented throughout the world in this direction. Finally,

this literature search may make it possible to build a proper plan on this area of investigation and lead to develop a firmer understanding and comprehension of the theoretical implications of this research area.

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# LEADERSHIP AS A CHALLENGE IN MODERN LIBRARIES AND INFORMATION CENTERS MANAGEMENT

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## ABSTRACT

Tremendous information explosion and their accessibility in different formats have made a complex situation in the ever-changing library and information centers. In addition, some resources such as human, financial, computer and many more, need for their management in the library through appropriate training in 'management' as a discipline on a larger scale in LIS education particularly on leadership education. But the current LIS programmes in India tend to place little emphasis on management education particularly leadership education and an attempt is made to draw an appropriate course structure with modern management facets to be incorporated in LIS education programmes in India by which the different higher education centres would be able to create successful library managers or leaders for big research institutions or higher academic libraries.

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## Introduction

Libraries are increasingly becoming complex organizations. The situation has been further complicated by the availability of large volumes of valuable data and information in digital form via-networks, which needs to be integrated with in-house resources and services. Evolving and adopting the right strategy to optimize resource utilization while realizing the goals and objectives require considerable expertise in management. The main issue is to ensure cost effectiveness while being innovative and entrepreneurial (Bryson, 1990). In the beginning of the 21st century, the projects and initiatives of quality assessment involve concepts and data from communication and information technologies that have been changing libraries. Clearly, assessing quality is a multifaceted process that focuses on the measurement of inputs, activities, outputs and outcomes (Bertot, 2004). The inputs are the investment sources of the libraries (e.g. the money, the staff, the space, the collections and the installed information technologies etc.) The activities are the services or resources of the library that change inputs into outputs (e.g. the technical treatment of the information, the licenses of the available databases). Outputs are the amount of work produced by the library. Its evaluation makes it easier to quantify the accomplished work. For

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example, outputs are the number of books circulated, the number of reference questions answered, the number of available terminals, the number of accessible databases, the number of loans and so on. The outcomes are the ways in which library users are changed as a result of their contact with the library's resources and programmes' (Hernon, 2002). Whereas, quality services means resources and services that satisfy the user's expectations (Parasuraman, Zeithaml & Berry, 1985). These require LIS students with knowledge of modern management techniques, principles, and leadership qualities and to be a good leader for providing quality library services.

#### **Approach to Leadership**

Librarianship in library profession is the ability to influence the behaviour of others in a desired direction towards the achievement of the pre-determined objectives set by the organization. The attributes of the librarians would be to create an environment in which people will inspire yourself to do the assigned job with great zeal and confidence. There are many different leadership theories and models have been developed by the leadership researchers so far. Of them, the leadership trait theory, a theory that concerns itself solely with leader characteristics, the different researchers identified a variety of leadership traits and characteristic, it is generally thought that there are five major leadership traits : intelligence, self-confidence, determination, integrity and sociability, possessed by leaders for exhibiting leadership behaviour (Northouse,

1997). But this theory neglected to account for why some individuals might be effective leaders in certain circumstances yet not in others and ultimately it fails to offer a guide line for leadership development. Cognitive resources theory and the leadership skills theory are then explored, and the relationship between the leader and the environment is examined. These two theories, however, have many similarities with the trait theory but the notable difference is that they recognize that situational factors affect leadership effectiveness. However, Bass (1989 and 1990) described three basic theories of leadership (i) Personality trait which may lead people into leadership role (Trait Theory); (ii) A crisis or important event may choose a person to rise (Great Events Theory) and (iii) People learn leadership skills (Transformational Theory). On the process of leadership, Kouzes and Posner (1987) advocated five ways to be the successful leaders that are (i) Challenge the process; (ii) Inspire a shared vision; (iii) Enable others to act; (iv) Model the way and (v) Encourage the heart. When a person is committed to, and practice using his leadership capabilities at all levels in his life, then he can and will develop his own potential as a leader. There is no need to be a leader to be able to manage other people but, to be an outstanding manager, need to have some of those essential skills and qualities that are necessary in developing as a leader. Leaders make decisions in three areas that impact on the outcomes and survival of the organization: people; strategy and crisis. On the other hand, effective leadership may be

dependent on the leader, the follower, the situation, or any combination of these factors.

If the librarian is as a library's leader for information literacy or scholarly communications, he will get a significant role in shaping future library services. To change the future services of the library, the librarian must be self-motivated, achievement oriented and positively inclined towards accomplishing library objectives by providing decision through participation at different levels of the library.

### Need and Objective

LIS education in India has expanded much more since independence in the form of increase in number of LIS departments in the universities and institutions offering specialized courses in LIS, and in the increase in number of students as well as courses. Research has also been initiated and accelerated in different facets of the subject with the support of the universities and different funding agencies (Satija, 1993). Presently, near about 120 universities are now offering Bachelor's degree, 78 Master's degree, 21 two-year integrated Master's degree, 20 M.Phil degree and 63 Ph.D degree programme in LIS (Singh, 2003). However, the present study examines the course contents of a few selected LIS schools in the State of West Bengal relating to the adequacy in the area of management. The author also been tried to design a model course on 'Library Management' and to highlight how much in the area of leadership aspect is incorporated in the LIS course curriculum.

This is because without the knowledge of modern management and leadership qualities, LIS professionals will not be able to manage the complex library system as a library or information manager.

### Methodology

Some relevant literatures have been analyzed in order to achieve the objectives of the present study and to get the meaningful conclusions. There are more than seventy eight universities offer Master degree in Library and Information Science in India (UGC, 2001). In the State of West Bengal six universities offer 1-year Master's programme and one university offers 2-year Master's programme. The course contents of the following six universities (considering those only offer 1-year Master's programme) in LIS have been examined for the present study:

- ◆ Jadavpur University
- ◆ University of Burdwan
- ◆ Rabindrabharati University
- ◆ Vidyasagar University
- ◆ University of North Bengal
- ◆ University of Kalyani

The apex body for higher education in India is named as University Grants Commission (UGC), drafted a model syllabus for LIS schools in India. The course contents in 'Library Management' in the UGC's model syllabus have also been considered in this study. The analysis is carried out at three levels. They are :

- i. To resemble the course contents of LIS schools with the UGC model syllabus
- ii. To resemble the course contents of LIS

schools with a check list prepared based on recent text book in management to detect the gaps

- iii. To analyze the current research trend by examining the key words and key concepts derived from recent issues published during the year 2007 of eight core journals in the field of LIS and resembling with the course contents of LIS schools

By applying the above tools and techniques, it would be possible to detect how much the course contents carry in the area of

management of LIS schools.

**Analysis**

*UGC vs LIS school curriculum- Comparative analysis*

UGC has divided the paper Library Management into 9 main units in its model curriculum. Under these, 48 sub facets have also been enumerated covering 70% of the domain. Table 1 gives a comparative statement of these check list with the syllabus of 6 LIS schools selected for this purpose.

*Table 1. UGC Model Syllabus vs. LIS Schools Syllabus - Comparison*

Management Facets Prescribed by UGC	Jadavpur University	University of Burdwan	Rabindra bharati University	Vidysagar University	University of North Bengal	University of Kalyani
<b>UNIT 1 Management</b>						
Management concepts, definition & scope	Yes	Yes	Yes	Yes	Yes	Yes
Management Styles and approaches	Yes	Yes	Yes	Yes	Yes	Yes
Schools of Management thought	Yes	Yes	Yes	Yes	Yes	Yes
Functions & principles of Scientific Management	Yes	Yes	Yes	Yes	Yes	Yes
<b>UNIT 2 Human Resource Management</b>						
Organizational Structure	Yes	Yes	Yes	Yes	Yes	Yes
Delegation communication & participation	Yes	Yes	Yes	Yes	Yes	Yes
Job analysis & description ; Job evaluation	Yes	Yes	Yes	Yes	Yes	Yes
Inter-personal relations	Yes	Yes	Yes	Yes	Yes	Yes
Recruitment procedure	Yes	Yes	Yes	Yes	Yes	Yes
Motivation : Ground dynamics	Yes	Yes	Yes	Yes	Yes	Yes
Training & Development	Yes	Yes	Yes	Yes	Yes	Yes
Disciplines and grievances	No	No	Yes	No	No	Yes
Performance appraisal	Yes	Yes	Yes	Yes	Yes	Yes
<b>UNIT 3 Financial Management</b>						

Resource mobilization	Yes	Yes	Yes	Yes	Yes	Yes
Budgeting techniques and methods	Yes	Yes	Yes	Yes	Yes	Yes
PPBS, Zero based budgeting etc	Yes	Yes	Yes	Yes	Yes	Yes
Cost effectiveness & cost benefit analysis	Yes	Yes	Yes	Yes	Yes	Yes
Outsourceing	No	No	Yes	Yes	No	No
<b>UNIT 4: Reporting</b>						
Types of Reports, Annual report . Compilation, Contents and style	Yes	Yes	Yes	Yes	Yes	Yes
Library Statistics etc.	Yes	Yes	Yes	Yes	Yes	Yes
<b>UNIT 5: System Analysis &amp; Design</b>						
Library as a system	Yes	Yes	Yes	Yes	No	Yes
Project management, PERT, CPM						
Decision tables	Yes	No	Yes	No	No	No
Performance evaluation, standards, MIS	Yes	Yes	Yes	Yes	Yes	Yes
Performance Measurement, Reengineering	Yes	Yes	Yes	Yes	Yes	Yes
Time and Motion study	Yes	Yes	Yes	Yes	Yes	Yes
SWOT (Strength Weakness Opportunities Threat)	Yes	Yes	Yes	Yes	No	Yes
DFD (Data Flow Diagram)	Yes	Yes	Yes	No	No	Yes
<b>UNIT 6: Total Quality Management (TQM)</b>						
Definition, concept, elements	Yes	Yes	Yes	Yes	Yes	Yes
Quality Audit	Yes	Yes	Yes	Yes	Yes	Yes
Technology management	Yes	Yes	Yes	No	No	Yes
<b>UNIT 7: Library house keeping operation</b>						
Different sections of LIC and their functions	Yes	Yes	Yes	Yes	Yes	Yes
Book ordering, acquisitions and technical processing	Yes	Yes	Yes	Yes	Yes	Yes
Serial control, Circulation control, maintenance etc.	Yes	Yes	Yes	Yes	Yes	Yes
Collection development, management policies, procedures evaluation and weeding	Yes	Yes	Yes	Yes	Yes	Yes



Archiving-conservation, preservation, restoration including print, non-print and electronic materials	Yes	Yes	Yes	Yes	Yes	Yes
Stock verification - Policies and procedures	Yes	Yes	Yes	Yes	Yes	Yes
<b>UNIT 8 - Planning</b>						
Concept, definition, need & purpose	Yes	Yes	Yes	Yes	Yes	Yes
MBO	Yes	Yes	Yes	Yes	Yes	Yes
Building and space management	Yes	Yes	Yes	Yes	Yes	Yes
Risk management, contingency management	Yes	No	Yes	Yes	No	Yes
Planning and related infrastructure	Yes	Yes	Yes	Yes	Yes	Yes
Library standards	Yes	Yes	Yes	Yes	Yes	Yes
<b>UNIT 9 - Managing change</b>						
Concept of change	Yes	Yes	No	Yes	Yes	No
Changes in procedures, methods, use of new tools & techniques	No	Yes	No	No	Yes	Yes
Problems in incorporating change	Yes	No	No	Yes	Yes	No
Techniques of Management change	Yes	Yes	No	Yes	Yes	Yes

- Jadavpur University by incorporating to 9 main units and further by only to 43 sub-facets, they have followed only 89.5% of the UGC model syllabus which is nearer to cent percent. However, a close observation of the entire syllabus showed the inclusion of 'Stress Management', 'Time Management' and 'Motion Management' under different facets.
- University of Burdwan syllabus includes 9 main facets under which 40 sub-facets are considered. So, they have included 83.3 % of the suggestions made by the UGC. In addition to UGC recommendation they have included 'Globalization Management' and 'Operation Management' in their syllabus.
- Rabindrabharati University has divided the syllabus into 8 main units under which 42 sub-facets are considered in their course curriculum according to UGC model. Through the close study of the entire syllabus it was found that they have included the area on 'Grievance Management' and 'Quality Audit' and occupies the rank 2<sup>nd</sup> as position by adhering 42 sub-facets of UGC model in their course curriculum.
- Vidyasagar University by adhering to 9 main facets and further only to 41

subfacets, they have adopted only 85.4% of the recommendation made by UGC in their syllabus.

5. North Bengal University occupies 6<sup>th</sup> position by dividing 8 main units and then it by 37 sub - facets of UGC recommendation and their by leading to 77 %. It was also observed that through depth analysis one of the major unit 'System Analysis and Design' have excluded from their curriculum in accordance with UGC.
6. University of Kalyani has got the same position in comparison to Rabindrabharati University for adopting UGC model by employing 42 sub-facets in their syllabus under different heads and thus them leading to 87.5 %. Additionally, University of Kalyani has included 'Disaster Management' and 'Modern Management Techniques' in their syllabus.

#### **Additional Checklist of Management Facets**

In today's changing world, characterized by growing competition, technological change which is giving birth to new products and process... management has become a complex and a challenging affair in any organization. The dynamics of it should necessarily be the characteristic of any study of its theory and practice (Haynes, 1986) 'Management Science' is a growing discipline and many new facets relevant to LIS schools are found in current literature (Morden, 2004). Few concepts that need to be seriously considered for inclusion in LIS school course contents as because

university graduates in library and information science are generally expected to hold management positions at some point in their career, and these are:

1. *IT Management* : The innovation of information technology revolution has brought a myriad of changes in all walks of life including management of library and information organizations. Therefore, IT management is an essential task for a library manager and he should possess enriched knowledge of establishing standards, norms and methods for evaluating, purchasing, implementing and using technology, including hardware, other equipment, software and staff training. This justifies in short the inclusion of IT management in the LIS Syllabus (Mcera, 2006).
2. *Knowledge Management*: Knowledge management is the explicit and systematic management of vital knowledge and its associated processes of creation, organization, diffusion, use and exploitation. Identification of knowledge, as a recognized field of principal investigation for business use, in addition to academic research, has spurred continuing demand for information systems. The information explosion threatens to overwhelm and overload individual and corporate response mechanisms. Knowledge leads people in the effective usage of information so that they can make more informed and successful decisions in addition to enhanced customer interactions (Warier, 2004)

3. *Strategic Leadership*: It is the ability to anticipate, envision, maintain flexibility, and empower others to create strategic change as necessary. Multifunctional in nature, strategic leadership involves managing through others, managing an entire enterprise rather than functional submit, and coping with change that continues to increase in the 21st century competitive landscape. as is clearly illustrated in the Opening Case. Because of this landscape's complexity and global nature, strategic leaders must learn how to effectively influence human behaviour, often in uncertain environments. By word or by personal example, and through their ability to envision the future, effective strategic leaders meaningfully influence the behaviours, thoughts, and feelings of those with whom they work (Hasan, Immelt, Marks & Meiland, 2003)
4. *Change Management* : In any organization, individual, there are two competing forces in operations. These are the forces of stability that aim to maintain human system in the status quo and the forces of change that push the system towards change. In most human systems, these two forces are evenly balanced-leading to what is known as a quasi-stationary equilibrium. This maintains the system in the forces of change need to be strengthened or the forces of stability need to be weakened (Nilakant & Ramnarayan, 2006).
5. *Strategic Management*: The strategic management is the management process that involves an organization's engaging in strategic planning and the acting on those plans (Stoner, Freeman and Gilbert, J. 2001). In addition, strategic management provides a comprehensive approach to managing the impact of a dynamical environment upon the psychological, sociological, political and other subsystems which are found in a complex organization such as library. SWOT (Strength, Weakness, Opportunities and Threat) is a strategic four-factor analysis, which will lead to critical success of an organization. Strategic management enables Library managers to quantify and qualify its contributions to the community or organization on a long-term basis (Corrall, 2000).
6. *Marketing Management*: Information has become a very profitable commodity and as such, many profit-making organizations are now involved in the provision of information services and products on a scale equivalent to that being done by librarians. This phenomenon has slightly increased the number of competitors in the information market place. The emerging technological challenges and societal changes also pose an unprecedented threat to the continued survival of libraries as worthy information provides. In the face of these challenges it is now time for libraries to exhibit that they are invaluable to the continued survival and sustenance of

their organisations. This can best be done by actively marketing their service management (Seddom, 1990).

7. *Transformational and Transactional Leadership* : The transformational style of leadership encompasses attributes where the leader inspires and influences his subordinates towards a complete change in functioning for achieving greater goals and achievements, whereas the transactional style includes the usual routine job required for the organizational sustenance. Leadership quality concentrates in libraries on what they are (be) such as beliefs, and character, what they know such as jobs, tasks and human nature, and what they do such as implementing, motivating and providing direction (Jena and Rautaray, 2007).
8. *Conflict Management*: Conflict reflects some discord or incompatibility. It occurs as a result of disagreement, threat or opposition between individuals or groups, or within an individual or group. Conflict has traditionally been viewed as destructive-a state of affairs that should be suppressed or eliminated. Conflict sometimes leads to open clashes resulting in deterioration in human relations in an organisation, which ultimately affects the smooth functioning of the organization. So, managing conflict should be a part of LIS curriculum as this is a major issue in libraries specially in India (Dunham, 2001).

An examination of few checklists for identifying the management facets Vs the syllabus of LIS schools under study reveals the fact that 'IT Management' is excluded by all the selected LIS schools in their syllabus and 'Risk Management' have been included only by Burdwan University, Vidyasagar University and North Bengal University. However, there is a wide gap in the existing structure related to course contents of selected LIS schools. A semi-structured course contents in 'Library management' will be developed for making value-added LIS graduates with adequate managerial skills for resolving all the problems arise in the libraries, not at present but also in future.

#### **Analysis of some leading journals**

Eight important journals are selected for present study :

- ❖ IASLIC Bulletin,
- ❖ Annals of Library and Information Studies,
- ❖ Library Herald,
- ❖ SRELS Journal of Information Management,
- ❖ Libri,
- ❖ Journal of Librarianship
- ❖ Information Science
- ❖ Journal of Documentation and Library Trends

Research articles published in the current issues (last one-year) are taken for evaluation purposes. 317 articles are published in the above eight journals and their subjects classification is represented in the table below :

Table 2 : Subject-wise count of articles published in leading journals

Sl.No.	Subject classification based on key words & key concepts	Total of articles
1.	<b>Quantitative in LIS :</b>	
	<i>Bibliometric Study</i>	19
	<i>Library Statistics</i>	04
	<i>Citation Analysis</i>	12
2.	<b>Users' Study :</b>	
	<i>Lib. Community ancl Library Users</i>	02
	<i>Information Needs</i>	17
	<i>Infarmation Use</i>	16
	<i>Information Sceking Behaviour</i>	12
3.	<b>Information Organization :</b>	
	<i>Library Cataloging</i>	07
	<i>Indexing</i>	03
	<i>Subjects Heading</i>	01
	<i>Library Classification</i>	04
4.	<b>Library and Society</b>	
	<i>Information Communication</i>	09
	<i>Biography of LIS Professional</i>	02
	<i>Professional Body</i>	03
5.	<b>Library Management:</b>	
	<i>Collection Development</i>	11
	<i>Library Preservation</i>	18
	<i>Personnel Management</i>	12
	<i>Financial Management</i>	10
	<i>Cost Analysis</i>	13
	<i>Library Organizational Management</i>	05
	<i>Management Information Systems (MIS)</i>	04
	<i>Management of Specific Types of Libraries</i>	20
6.	<b>Research and Education in LIS :</b>	
	<i>LIS Education</i>	05
	<i>Research in LIS</i>	03

	<i>E-learning</i>	08
7.	<b><i>ICT Applications in LIS :</i></b>	
	<i>Library Automation</i>	09
	<i>Library Networking</i>	05
	<i>Library Consortium</i>	05
	<i>Library Database</i>	06
	<i>Software</i>	02
	<i>Web Page</i>	04
	<i>Digital Library</i>	29
8.	<b><i>Information Sources and Services :</i></b>	
	<i>Bibliography</i>	07
	<i>Information Services</i>	04
9.	<b><i>Knowledge Management</i></b>	14
10.	<b><i>Information Marketing</i></b>	08
11.	<b><i>Intellectual Property Right Patent and Copyright</i></b>	04

In the table 2, a significant number of articles are published on Digital Library and then on Bibliometric Study. The traditional facets of management such as 'Personal Management', 'Financial Management', 'Library Organizational Management' have received fair representation in the current literature. LIS professional have attempted to write on sub-facets like 'Library Collection Management', 'Library Preservation', 'Cost Analysis', and 'Management Information Systems', which are of concern in the present management scenario. 'Outsourcing', 'Strategic Leadership', 'Pricing of Information Products & Services Management' and 'Stress Management' should need to be included in the LIS syllabus as because these are the emerging facets in the field of Management. The Library managers should acquire knowledge

about these new concepts to run the library smoothly.

### **Conclusion**

Management researchers' are always developing new technique and models for organizing and controlling the organizations. Following suggestions may help to develop the knowledge and skills of LIS professionals to act as a leader in the Library and Information Centers :

- Introducing new management concepts on LIS school syllabus.
- Continuing education.
- Continuing refreshment programmes for LIS Professionals.
- Establishing ownership of individual's leadership behaviour and commitment to works.

- Developing ideas and commitment to library managers in creating, analysing, and synthesizing strategic scenarios on the library's future.

It is suggested that an unified LIS syllabus in connection with (UGC, 2001) model syllabus should be introduced in LIS schools in the State of West Bengal with the provision of some optional papers in MLIS course. To develop the LIS graduates as per modern trends of library functions and services some important factors such as adequate faculty members, application of modern information and communication technology system, and other infrastructures should seriously be considered. In spite of these, since LIS education is a inter-disciplinary subjects, some faculty members should be hired from other subject fields such as Management, Economics, Statistics and so on to involve directly or indirectly in teaching the LIS graduates to understand the peripheral subjects. The present condition prevailing in India large research/academic/public/special libraries, the chief information manager or library manager are either vacant or occupied by persons hired from other disciplines specially from 'Management' or 'Computer Science', To overcome the problems of the present situation, adequate education and training are to be introduced for LIS professional by which they would act as a real library manager in comparison to other institutions.

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# SOCIAL TAGGING FOR BOOKS IN PUBLIC LIBRARIES : AN ALTERNATIVE COST-EFFECTIVE WAY OF CATALOGUING

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## ABSTRACT

Librarians Catalogue documents from their own perspectives anticipating probable approaches of users. Web environment provides the opportunity to take into consideration of the users own preference to catalogue documents and make them available in the web. Basic properties and function of social tags have been identified. A study have been conducted on various users catalogue with the help of Library Thing. Analysing data it is concluded that future cataloguing endeavour would be benefitted through social cataloguing especially in deciding subject descriptors.

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Since the inception of librarianship as profession, we are accustomed to organize resources from our own viewpoints, based on certain assumptions about users. We consider ourselves

that we are enough experienced about the approaches of users. We can never be sure in advance how do the users seek information, their preferred modes, their preferred terms and so on. We may guess from our past experiences or, at best we could 'guesstimate'; but we can never be sure that what we are doing is right or that the same task can be done in that way alone. In this process some sort of ad-hoc attitude creeps in, resulting 'Authoritarianism' in function.

From our traditional way of handling document we tend to analyse the subject. We try to impose the probable users' approach on the document and thus categorise them into various discipline. So

the primary task is to identify the specific group of users who may need this document. Then comes the question of building roads / ways for the users so that they could walk down towards the concept through that road. Here arises the question of achieving same state of mind among both the contributor and reader. To a large extent matching is essential in their perception about the subject, their sociolinguistic-cultural equanimity for understanding and assimilation of the document among readers.

The problem of preparing written representative or surrogate in Academic or Research libraries is quite strait in nature. There exists certain standardization to

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achieve international standard within the scientific community and academic world. So a uniform pattern or terminological set up may be followed conveniently. Public Library deals heterogeneous populace with diverse needs, different levels of perception and different linguistic ability. Though all these distinctions may be rooted through economic considerations, still language plays pivotal role in library activities starting from collection towards organization, dissemination and use. As per the very definition of language, it is a system of arbitrary vocal symbol by which members of a social group co-operate and interact. We must remember that we can not expect readers from a single co-operative social group. We may try to achieve it by imposing a system of controlled vocabulary mechanism.

Basically there exists three main kind of relationships, that derives out of three different kinds of analysis about 'terms' (i.e., written words) of any language. They are 'equivalent', 'hierarchical' and 'associative' relations among words in any language.

In equivalent relations of terms we try to direct the users from a 'non-standard' to a 'standard' term (that have been accepted as standard for a long time) using any Vocabulary Control Device.<sup>1</sup> Questions arise about the validity of these standards. The discretion of deciding 'standard term' suffers severely, from biasness to any particular group of people, varies significantly according to time, space and person matrix. In case of hierarchical relation the super-ordinate and the sub-

ordinate relationships are established. Whatever other relations exist besides the above two may be ascribed to genus-species, part-whole, cause-effect, co-ordinate, co-lateral, etc. can be built with the help of 'associative' relations. We are almost satisfied with the handling methodologies or organizational techniques in case of printed world without going into much intricacy. But some new options cropped up with the advent of web-enabled services.

In any corner of the globe, with a little effort we could connect a computer with the Internet, an ultimate home for web-based services. Attaching a small apparatus - a drive we could connect the weird world even without the wire. This very environment provides us an opportunity to move from authority-based cataloguing towards the way we deem our users approach the document. It is not system driven traditional cataloguing, rather catalogue as the users like to see it, interested to visualize it. This sort of user-assisted cataloguing (i.e., of the user, by the user and for the user) is known as 'social tagging' to present information world.<sup>2</sup>

As it is a newer field of study, obviously very few researchers endeavoured to study the similarity, as well as distinction between 'authority-based cataloguing' and 'social-tagging'. Besides, the effect of social tagging on books - how it facilitates the access to the books may also be studied.

### **Purpose of Study**

This study seeks to identify the basic properties and functions of social tags

attached to books; those tags - that are generated and attached by the users.

Another sincere objective of this study is to make a comparative analysis and critically review user-created tags with authoritative subject-headings like Sears' List of Subject Headings, Library of Congress Subject Heading List, etc.

To understand the gravity of the problem, even an indirect method of observation is sufficient. Instead of selecting any direct sample of book-catalogues using social tags, as is done in case of LibraryThing<sup>3</sup>, a renowned web site for book-lovers has been adopted for analysis.

Within Library Thing - the tagging system is analysed to find out what different functions they serve. An evaluation is made regarding the process of the online service to help people catalogue their books easily. The system of attaching tags for their personal book collection and facilitate in retrieval are

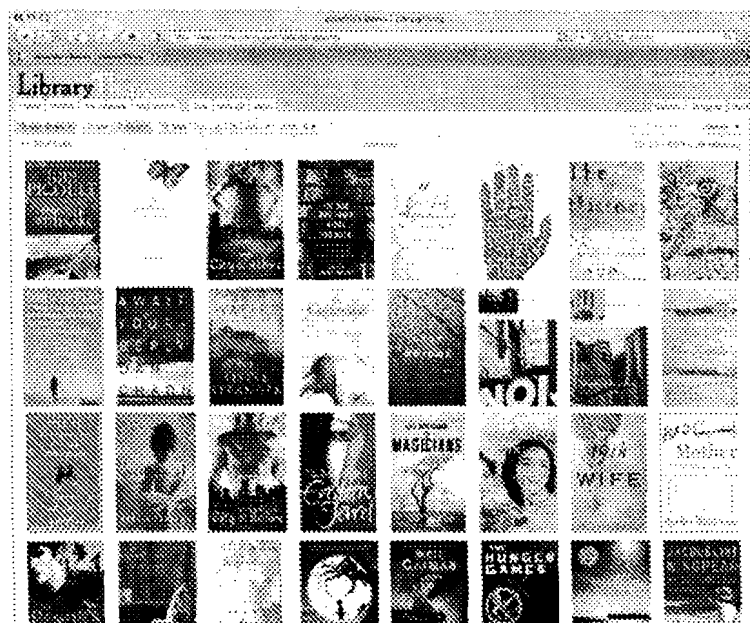
also reviewed methodically.

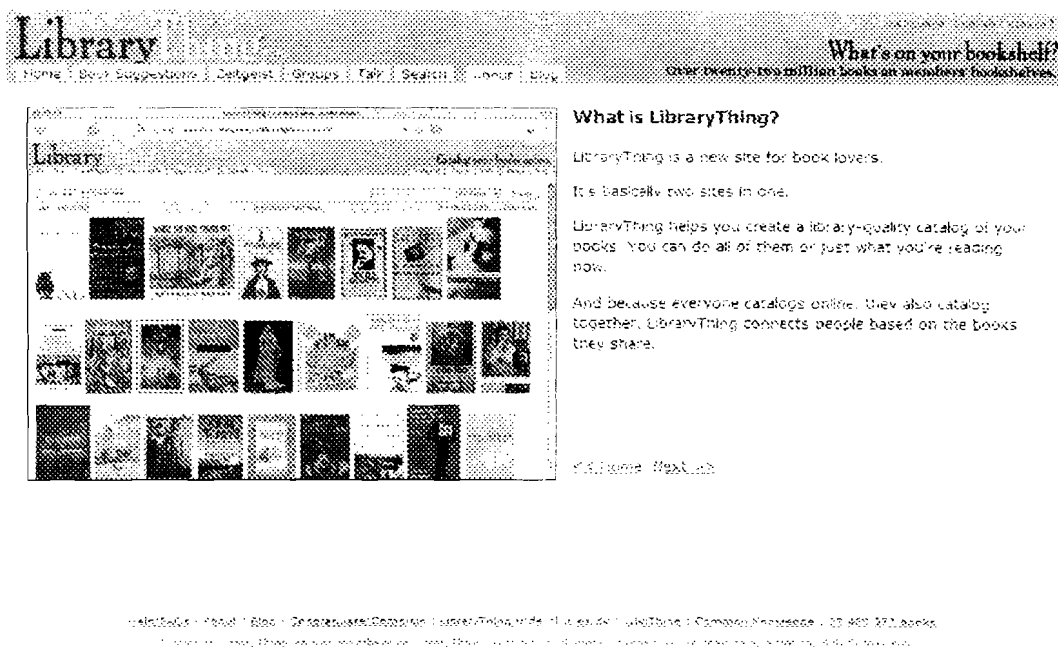
So, it is to be observed, what are the different function types (i.e., types of functions that can be served by these tagging) in which all these tags can be categorized. In this process, most often used tags shall also be recognized. Finally, a comparison is obvious between the social tagging and the authoritative subject heading.

To understand the nature of all the aforesaid problems, acquaintance with LibraryThing is highly warranted.

### LibraryThing

As defined in Wikipedia<sup>4</sup> - "Library Thing is a social cataloguing web application for storing and sharing personal library catalogues and book lists." Tim Spalding, the creator and majority owner made it available online on 29th August, 2005. Till September, 2009 Library Thing created





users around 9,20,000 and catalogued about forty five million books.

Being users of LibraryThing one can catalogue his or her personal collections, maintain reading lists, find and post book reviews and chat with co-minded users who like the same books. Sharing one's personal book catalogue is optional. Like other Open Source Initiatives, it is not mandatory for the members to share their resources. Rather, making one's book catalogue public or private is solely one's own prerogative.

### Technical and Social aspects of Library Thing

LibraryThing is not a very simple website that acts as a forum for book lovers. It helps to organize the documents of

members, prepare catalogue according to the international norm and transport records following universally accepted protocol. Z39.5 protocol is adhered to import bibliographic data from booksellers and libraries as well. Library sources do supply records prepared following MARC and Dublin Core description to the LibraryThing. Members of this site have the opportunity to import cataloguing information from amongst 680 libraries, including the renowned libraries like-Library of Congress, National Library of Australia, the Canadian National Catalogue, British Library Network, and Yale University Library<sup>5</sup>. As and when a member of the site identifies, locates and marks his/her book in the web - along with its exact specification - it's just a click away to add in the users' catalogue cart. If someone is incapable to locate the

right document he/she may add it manually. Books can also be added from another member's catalogue or searching within the LibraryThing itself.

ISBNs of all the books contain another rich source of information to build the database. ISBN comprises of either ten or thirteen characters that codifies different pieces of information regarding country of origin of the document, Publisher from the publisher code and other publication details to uniquely identify the document. Members of this site or any users may import the required list of ISBNs, analyses them and culminate important pieces of information essential to build library catalogue.

Looking at the social implications of user-centered cataloguing approaches - once a user catalogues books, he or she attaches tags, modifies or connects attractive cover pictures, finally adds value in the organizing process. If exactly same tags are used by another user for his book, both the books shall be retrieved while searching. This phenomenon implies a tacit relation between / among the persons those who ascribed the same set of tags for different documents individually owned by them and a relationship is also established between / among the said books containing same set of tagging. Tagging is linking or connecting among books having same tags.

WikiThing<sup>6</sup> describes tagging as a simple way to categorize books according to how a user thinks of them.... Thus one person will tag the DaVinci Code "novels" while another tags it "trashy, religion, marry," and still another only "summer home". Tags [as descriptors or keywords are particularly

useful for sorting and searching by those concepts; i.e., when we need a list of all your novels or all the books at the summer home."

So, at the outset it is evident that LibraryThing's tagging system could be considered directly as an online service to facilitate people (those who are interested to sign up to the page) to catalogue their books, without going into the intricacies of librarianship. On the other hand, Library Thing's also allows its members to add tags for their personal book. Thus, all the users are making their book catalogue available on line. Roll of Library Thing is to interlink people based on common personal collection. Those who won same set of book could share their views on the theme of their common reading<sup>7</sup>. From the traditional cataloguing point-of-view we are now interested to study - the method of organizing or classifying tags based on different performances of these tags. It is also interesting to know what are the most often used function tags. Ultimately as library professionals we are more concerned about the comparative study of all these 'assigned tagging terms' and the controlled list of "Library subject headings"<sup>8</sup>. In this study 'Library of Congress Subject Headings' has been used for the comparison.

### **Methodology**

Here, we have tried to infer from the sample survey conducted by different groups of professionals. All the documents catalogued in LibraryThings serve as the population for these sorts of survey work. One of such survey work is being

The screenshot shows a library website interface. The main content area features the book 'The Da Vinci Code' by Dan Brown. The book cover is on the left, and the title and author information are on the right. Below the title, there are several tags: 'mystery', 'thriller', 'fiction', 'action', 'adventure', 'crime', 'detective', 'historical', 'religious', 'suspense', 'thriller', 'mystery', 'fiction', 'action', 'adventure', 'crime', 'detective', 'historical', 'religious', 'suspense', 'thriller'. There are also sections for 'What's on your bookshelf?' and 'Member recommendations'.

conducted on a limited set of books catalogued in the last quarter of the year 2008. In that study, fifty English books have been short listed, comprising of both fiction and non-fiction categories. They have picked the sample using simple random sampling method from the cart of 'most often tagged fiction' as well as 'most often tagged non-fiction' categories. The tagging data from both the categories of sample have been stripped from the main page tag-clouds and related tag frequency. We could decide which one we may adopt as descriptor. They have extracted the tagging data (tag cloud and tag frequency) from the sample and used only the main page tag cloud for analysis.

Now we are in a position to decide which one we may adopt as descriptor. The main page contains both member tags - along with their frequencies, as well as the recommended tags of LibraryThings. Even

member recommendations are also available from the main page.

The mentioned study collects the tag frequency data in a database - indicating the number of times 'the tag' is used for a particular work. In other words, the frequency of it.

### Analysis of Collected Data

As described in the objective, after capturing the tags in a database the said study classified tags into six main categories; viz., Bibliographic description, Subject-related information, Personal Reference, Opinions, Awards/Top lists and connectivity.

Again the class Bibliographic Descriptor includes subfields like-Genre/Form, Author, Country of Origin, Language, etc. Detailed Subject field information includes character or people, Timeframe, Setting or Place and Subject area.

It is quite interesting to note that the class or category 'Personal Reference' bears information about 'Ownership' of the related book (owned / borrowed), 'Reading Status' (Unread/Reading-in-progress/read, etc), 'Time' e.g., 2009, 'Task' like @work or textbook and location (e.g., bookshelf).

Users also express their feelings in sensational terms- like, favourite, interesting, thought-provoking, path-breaking, etc. In all the works, Subject-related tags are maximum (48%), followed by Bibliographic Description (31%), Personal Reference (17%), Opinion (2%), Awards / Top Lists (1%), and Connectivity (1%).

In each category the portion of each sub-category has also been worked out. Even to that extent, it is observed that in case of 'Fiction' 63% tag frequency is about bibliographic description. whereas, in case of 'Non-fiction' only 24% tag frequencies are about bibliographic description. Almost reverse phenomenon is observed in case of books deals mainly Subject-related information.

The same set of information, have also been retrieved by them from Library of Congress Catalogue to study the subject headings, used from Library of Congress Subject Headings (LCSH). Compound Subjects, having complicated combinations (e.g., India - History - Fourth Century B C - Fiction) have been removed to pave way for the 'unitary terms' like India, History, Fourth Century B C, Fiction, etc. The figures indicate that only around 10% overlapping or conflicting cases have been observed between Social Tagging of LibraryThing and Library of Congress

Subject headings. Now, what can be inferred from the rest 90% of descriptive terms? If we are not underrating, it indicates towards the fallacy of Controlled Vocabulary. For example, where LCSHs contended with only 'Fiction', Social tags represented it with 'Classic Fiction', 'Detective Story', 'Science Fiction', 'Autobiographical Fiction'. The terms are more 'lucid' and 'familiar' enough compared to 'Standard Vocabulary'.

### Conclusion

In this write up, unintentionally some grievous and critical observations are made regarding the much hyped traditional Controlled Vocabulary System. As it is mentioned in the beginning the very purpose of Controlled Vocabulary - to resolve the problem of Information Retrieval from the content having 'Synonyms', 'Homonyms', 'Variant forms of same phoneme' at all the broader, narrower, or related levels of the hierarchy.

Embedding the techniques 'Concept Mapping' and 'Semantic Net', with the help of 'Web Ontology', language handling would be more stream lined than earlier. Library community may expect to come out with a definite solution to the problem. At this juncture, we can safely conclude that the 'Folksonomy' in the way of 'Social Cataloguing' puts forward an alternative way in building surrogates for the Public Library.

Future Catalogue Codes and Classification Schedules must get an insight from this kind of study. Input or feedback from them would be more helpful in the total process.

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# ROLE OF WIKI IN A LIBRARY WEB PORTAL : A CASE STUDY

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## ABSTRACT

This paper has discussed about the role and importance of wiki in a library web portal. Library web portal contains the all resources of a library or information centre. Not only resources regarding library, but also provides several web based services. Being a component of Web 2.0, wiki allows users to collaboratively create, edit, link, and organize the content of a website, usually for reference material. There are different types of wiki software like web-based, personal and mobile wiki. MediaWiki is a software which is based on PHP language, used frequently to develop wiki website. This paper includes the discussion on wiki services like Dspacewiki, GreenstoneWiki and KohaDeveloperWiki. Also this paper contains various library who use the wiki site which are powered by MediaWiki, DokuWiki, PBWiki or Wikispaces.

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## 1. Introduction

A web portal is a site that provides a single function via a web page or site. Web portals often function as a point of access to information on the World Wide Web. Portals present information from diverse sources in a unified way. Apart from the search engine standard, web portals offer other services such as e-mail, news, stock prices, infotainment, and other

features. Portals provide a way for enterprises to provide a consistent look and feel with access control and procedures for multiple applications, which otherwise would have been different entities altogether. An example of a web portal is MSN. The term "Web Portal" describes as "a network service that brings together content from diverse distributed resources using technologies such as cross searching, harvesting and altering, and collates this in to an amalgamated form for presentation via a web browser to the user".

A library portal is a single access point combining the library catalogues, subscription databases, subject gateways, electronic journals, full text articles, Institutional Repository, archived database, content management system, Library 2.0, metadata harvester etc. Library portal meets the individual needs of users, which either the system itself can tailor the delivery and presentation of information content or the users themselves can customize the type and format of information displayed. Library portal is now the standard interface to

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generate library resources and services through a single access and management point for users. At present libraries and information centres are developing their portal with their resources, but the resources are not properly organized. There are many kinds of resources available in the libraries and information centres, but they are not published in the library web portal due to lack of proper technology. So, the organized library web portal means that all library services and resources are available in the library web portal.

Wiki is a component or tool of Web 2.0, which is the network as a platform, spanning all connected devices. Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an "architecture of participation" and going beyond the page metaphor of Web 1.0 to deliver rich user experiences." There are four categories of Web 2.0 i.e. (i) Read-write web, (ii) Social networking component, (iii) collective intelligence support component and (iv) information mashups component and wiki belongs to "collective intelligence support component" that allows users to collaboratively create, edit, link, and organize the content of a website, usually for reference material. Wikis are often used to create collaborative websites and to power community websites. These wiki websites

are often also referred to as wikis; for example. Wikipedia is one of the best known wikis. Wikis are used in many businesses to provide affordable and effective Intranets and for Knowledge Management. Ward Cunningham, developer of the first wiki, WikiWikiWeb, originally described it as "the simplest online database that could possibly work".

### 1.1 Historical Background

WikiWiki Web was the first site to be called a wiki. Ward Cunningham started developing WikiWikiWeb in 1994, and installed it on the Internet domain c2.com on March 25, 1995. It was named by Cunningham, who remembered a Honolulu International Airport counter employee telling him to take the "Wiki Wiki" shuttle bus that runs between the airport's terminals. According to Cunningham, "I chose wiki-wiki as an alliterative substitute for 'quick' and thereby avoided naming this stuff quick-web."

Cunningham was in part inspired by Apple's HyperCard. Apple had designed a system allowing users to create virtual "card stacks" supporting links among the various cards. Cunningham developed Vannevar Bush's ideas by allowing users to "comment on and change one another's text". In the early 2000s, wikis were increasingly adopted in enterprise as collaborative software. Common uses included project communication, intranets, and documentation, initially for technical users. Today some companies use wikis as their only collaborative software and as a replacement for static intranets. There may

be greater use of wikis behind firewalls than on the public Internet.

## 2. Definition

- 1) Wiki is a piece of server software that allows users to freely create and edit Web page content using any Web browser. Wiki supports hyperlinks and has a simple text syntax for creating new pages and crosslinks between internal pages on the fly.
- 2) A wiki is a Web site that allows users to add and update content on the site using their own Web browser. This is made possible by Wiki software that runs on the Web server. Wikis end up being created mainly by a collaborative effort of the site visitors. A great example of a large wiki is the Wikipedia, a free encyclopedia in many languages that anyone can edit. The term "wiki" comes from the Hawaiian phrase, "wiki wiki," which means "super fast." I guess if you have thousands of users adding content to a Web site on a regular basis, the site could grow "super fast."

Wiki is unusual among group communication mechanisms in that it allows the organization of contributions to be edited in addition to the content itself.

Like many simple concepts, "open editing" has some profound and subtle effects on Wiki usage. Allowing everyday users to create and edit any page in a Web site is exciting in that it encourages democratic use of the Web and promotes content composition by nontechnical users.

## 2.1 Scope

The main scopes of wiki are:

- to allows users to collaboratively create, edit, link, and organize the content of a website, usually for reference material;
- to provide affordable and effective Intranets and for Knowledge Management;
- supports hyperlinks and has a simple text syntax for creating new pages and crosslinks between internal pages on the fly.
- it allows the organization of contributions to be edited in addition to the content itself

## 2.2 Characteristics :

- ◆ A wiki invites all users to edit any page or to create new pages within the wiki Web site, using only a plain-vanilla Web browser without any extra add-ons.
- ◆ Wiki promotes meaningful topic associations between different pages by making page link creation almost intuitively easy and showing whether an intended target page exists or not.
- ◆ A wiki is not a carefully crafted site for casual visitors. Instead it seeks to involve the visitor in an ongoing process of creation and collaboration that constantly changes the Web site landscape.
- ◆ It is a type of collaborative software;
- ◆ It allows web pages to be created and edited using a common web browser;

MediaWiki syntax	Equivalent HTML	Rendered output
"Take some more tea," the March Hare said to Alice, very earnestly.	<p>"Take some more tea," the March Hare said to Alice, very earnestly.</p>	"Take some more tea," the March Hare said to Alice, very earnestly.
"I've had nothing yet," Alice replied in an offended tone: "so I can't take more."	<p>"I've had nothing yet," Alice replied in an offended tone: "so I can't take more."</p>	"I've had nothing yet," Alice replied in an offended tone: "so I can't take more."
"You mean you can't take less," said the Hatter: "it's very easy to take more than nothing."	<p>"You mean you can't take <i>less</i>," said the Hatter: "it's very easy to take <i>more</i> than nothing."</p>	"You mean you can't take <i>less</i> ," said the Hatter: "it's very easy to take <i>more</i> than nothing."

- ◆ It is usually implemented as a software engine that runs on one or more web servers, with the content stored in a file system and changes to the content stored in a relational database management system.

### 3. Description of the Tool

Wiki software is a type of collaborative software that runs a wiki system, allowing web pages to be created and edited using a common web browser. It is usually implemented as a software engine that runs on one or more web servers. The content is stored in a file system, and changes to the content are stored in a relational database management system. Alternatively, Personal wikis run as a standalone application on a single computer. Examples: WikidPad and VoodooPad.

#### 3.1 Editing Wiki Pages

Ordinarily, the structure and formatting of wiki pages are specified with a simplified markup language, sometimes known as "wikitext". For example, starting a line of text with an asterisk ("\*") is often used to

enter it in a bulleted list. The style and syntax of wikitexts can vary greatly among wiki implementations, some of which also allow HTML tags. The reason for taking this approach is that HTML, with its many cryptic tags, is not very legible, making it hard to edit. Wikis therefore favour plain text editing, with fewer and simpler conventions than HTML, for indicating style and structure.

Although limiting access to HTML and Cascading Style Sheets (CSS) of wikis limits user ability to alter the structure and formatting of wiki content, there are some benefits. Limited access to CSS promotes consistency in the look and feel and having JavaScript disabled prevents a user from implementing code, which may limit access for other users.

Increasingly, wikis are making "WYSIWYG" ("What You See Is What You Get") editing available to users, usually by means of JavaScript or an ActiveX control that translates graphically entered formatting instructions, such as "bold" and "italics", into the corresponding HTML tags

or wikitext. In those implementations, the markup of a newly edited, marked-up version of the page is generated and submitted to the server transparently, and the user is shielded from this technical detail. However, WYSIWYG controls do not always provide all of the features available in wikitext.

Many implementations (for example Media Wiki) allow users to supply an "edit summary" when they edit a page. This is a short piece of text (usually one line) summarizing the changes. It is not inserted into the article, but is stored along with that revision of the page, allowing users to explain what has been done and why; this is similar to a log message when committing changes to a revision control system.

Most wikis keep a record of changes made to wiki pages; often every version of the page is stored. This means that authors can revert to an older version of the page, should it be necessary because a mistake has been made or the page has been vandalised.

### 3.2 Navigation

Within the text of most pages there are usually a large number of hypertext links to other pages. This form of non-linear navigation is more "native" to wiki than structured / formalized navigation schemes. That said, users can also create any number of index or table of contents pages, with hierarchical categorization or whatever form of organization they like. These may be challenging to maintain by hand, as multiple authors create and delete pages in

an ad hoc manner. Wikis generally provide one or more ways to categorize or tag pages, to support the maintenance of such index pages.

Most wikis have a backlink feature, an easy way to see what pages link to the page you're currently on.

It is typical in a wiki to create links to pages that do not yet exist, as a way to invite others to share what they know about a subject new to the wiki.

### 3.3 Linking and Creating Pages

Links are created using a specific syntax, the so-called "link pattern".

Originally, most wikis used CamelCase to name pages and create links. These are produced by capitalizing words in a phrase and removing the spaces between them (the word "Camel Case" is itself an example). While CamelCase makes linking very easy, it also leads to links which are written in a form that deviates from the standard spelling. Camel Case-based wikis are instantly recognizable because they have many links with names such as "Table Of Contents" and "Beginner Questions". It is possible for a wiki to render the visible anchor for such links "pretty" by reinserting spaces, and possibly also reverting to lower case. However, this reprocessing of the link to improve the readability of the anchor is limited by the loss of capitalization information caused by Camel Case reversal. For example, "Richard Wagner" should be rendered as "Richard Wagner", whereas "PopularMusic" should be rendered as "popular music". There is no easy way to determine which capital letters

should remain capitalized. As a result, many wikis now have "free linking" using brackets, and some disable CamelCase by default.

### 3.4 Searching

Most wikis offer at least a title search, and sometimes a full-text search. The scalability of the search depends on whether the wiki engine uses a database. Indexed database access is necessary for high speed searches on large wikis. Alternatively, external search engines such as Google can sometimes be used on wikis with limited searching functions in order to obtain more precise results. However, a search engine's indexes can be very out of date (days, weeks or months) for many websites.

### 4. Uses of the Wiki in Library web Portal

At present, wiki acts a major service point in library web portal. Wiki has more vital applications in making the library web page is open for any registered host to publish, modify or update the information what has been published. We can describe that wiki as a service and it provides:-

- i) it can enable social interaction among librarians and patrons;
- ii) Essentially moving the study group room online;
- iii) library patrons via the wiki can share information, ask or even answer questions;
- iv) provides reference services and information literacy like Online reference, free online reference resources, information literacy, online tutorials etc;
- v) provides services to specific groups like

library services in academic institutions, library services in schools, services for distance learners etc;

- vi) provides training and development for librarians;
- vii) provides information about library technology

### 5. Use of the Wiki in LIS Education and Research

Wikis are one of many Web 2.0 components that can be used to enhance the learning process. A wiki is a web communication and collaboration tool that can be used to engage students in learning with others within a collaborative environment. In the following paragraph we discuss the use of wiki in LIS education and research

- i) As noted, wikis are characterized by a variety of unique and powerful information sharing and collaboration features. In cooperative learning, students work in heterogeneous groups to support the learning of their individual members. Cooperative learning leads to positive interdependence of group members, individual accountability, face-to-face interaction, and appropriate use of collaborative skills.
- ii) Wikis can be used to facilitate computer-supported collaborative learning, i.e., the development of collaboration by means of technology to augment education and research.
- iii) Cooperative, collaborative, and conversational, providing students with opportunities to interact with each other to clarify and share ideas, to seek

assistance, to negotiate problems, and discuss solutions.

- iv) Wikis allow learners to participate in collaboratively building resources. An essential part of reflective learning is that learners should be encouraged to reflect on their knowledge and make it explicit.
- v) Wikis allow this reflection to be done collaboratively, moving closer to a fully social constructivist mode of learning. Because of their very low technological barriers yet very rich and flexible functionality, wikis afford the opportunity to offer collaborative, constructive learning more extensively in our educational environments.
- vi) Students can use a wiki to develop research projects, with the wiki serving as ongoing documentation of their work.
- vii) Students can add summaries of their thoughts from the prescribed readings, building a collaborative annotated bibliography on a wiki.
- viii) A wiki can be used for publishing course resources like syllabi and handouts, and students can edit and comment on these directly for all to see.
- ix) Teachers can use wikis as a knowledge base, enabling them to share reflections and thoughts regarding teaching practices, and allowing for versioning and documentation.
- x) Wikis can be used to map concepts. They are useful for brainstorming, and

editing a given wiki topic can produce a linked network of resources.

- xi) A wiki can be used as a presentation tool in place of conventional software, and students are able to directly comment on and revise the presentation content.

## 6. Wiki Resources

### 6.1 Wiki Software

Wiki software is a type of collaborative software that runs a wiki system. This typically allows web pages to be created and edited using a common web browser. It is usually implemented as a software engine that runs on one or more web servers, with the content stored in a file system and changes to the content stored in a relational database management system. There are three category of wiki software:-

#### a) Web based Wiki

This type of software could be as comprising all of the software required to run a wiki, which might include a web server such as Apache, in addition to the Wiki engine itself, which implements the wiki technology. In some cases, such as ProjectForum, or some Wiki Servers, the web server and wiki engine are bundled together as one self-contained system, which can often make them easier to install. It is hard to determine which wiki engines are the most popular, although a list of lead candidates include TWiki, MoinMoin, PmWiki, DokuWiki and Media Wiki (Google trend history comparison). TWiki and Atlassian Confluence are popular on intranets and internet.

### b) Personal Wiki

Some wiki software is not intended for collaborative work, but for either content management or for personal information organizing. This is sometimes called a Desktop Wiki or a Personal Wiki.

### c) Mobile Wiki

Mobile wiki software is an extension of web-based wikis optimized for mobile devices, especially mobile phones. It provides the same basic functionalities of web-based wikis. The main difference is that it allows offline editing and reading of content, with an over The Air (OTA) synchronization of the changes when a wireless connection becomes available.

As we have seen that there are no software from Personal Wiki and Mobile Wiki and so that I am discussing three types of software from Web based Wiki.

#### i) TigerWiki

Tiger Wiki was a minimalist system written in PHP using the wiki base to easily build a framework of community sharing. Based on roWiki, it takes its basis while adding several functionalities such as password protection and the advanced management of pages history. Moreover, this free wiki software does not require MySQL to work. It was distributed under GNU General Public License. The development of Tiger Wiki was discontinued in September 2007.

#### ii) PodWiki

PodWiki is a wiki engine written in Perl, which primary markup language is Perl POD, but it also supports Wiki Shorthand, TWiki, TikiWiki and others. Pod Wiki

supports the usual features such as graphics, authentication and authorization, version control of pages and so forth. It comes with a number of so-called formatters, one of them is the blog formatter, which makes it possible to use PodWiki as a blog with wiki features. (or vice versa).

#### iii) MediaWiki

Media Wiki is a web-based wiki software application used by all projects of the Wiki media Foundation, all wikis hosted by Wikia, and many other wikis, including some of the largest and most popular ones. Originally developed to serve the needs of the free content Wikipedia encyclopedia, today it has also been deployed by companies for internal knowledge management, and as a content management system. Notably, Novell uses it to operate several of its high traffic websites.

Media Wiki is written in the PHP programming language, and can use either the MySQL or Postgre SQL relational database management system. Media Wiki is distributed under the terms of the GNU General Public License while its documentation is released under the GFDL and partly in the public domain, making it free and open source software.

## 7.2 Wiki Services

There are many types of services provided by the wiki. Here I am discussing three types of services:-

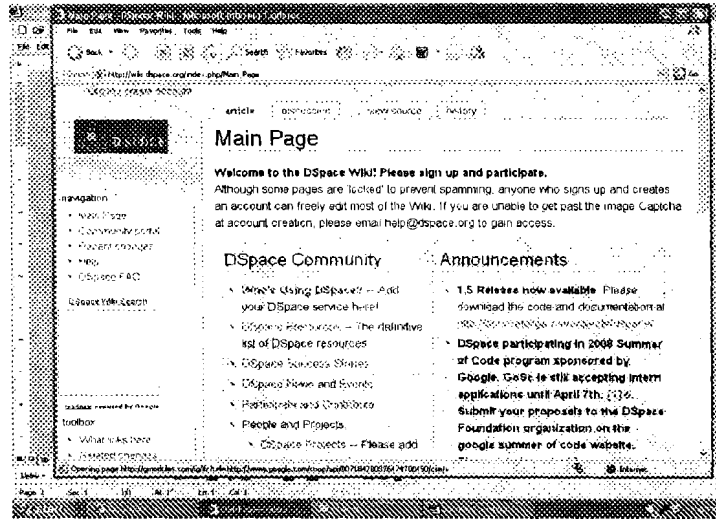
### 7.21 DspaceWiki :

This wiki is for the D Space open source community to share information, announce



events, record decisions, etc. Anything related to either the DSpace platform itself, or to creating and running DSpace services. It is powered by MediaWiki. Retrieved from <http://wiki.dspace.org/index.php>.

Fig-1 : Main Page of DSpace Wiki

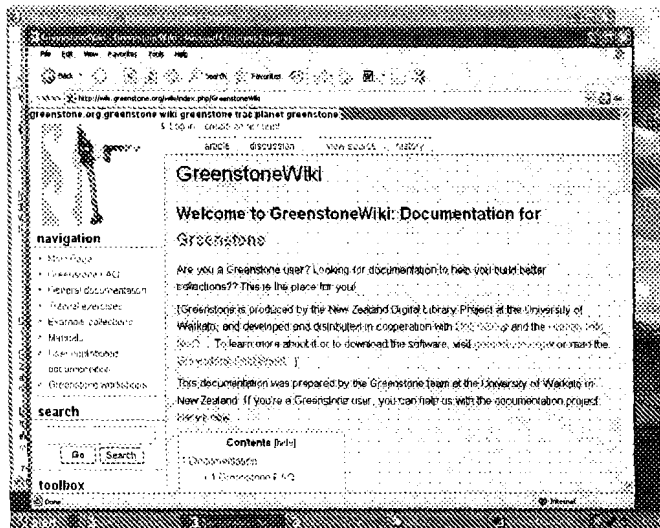


7.22 Greenstone Wiki

This wiki is for the Greenstone open source community to share Greenstone documentation, Greenstone community, Greenstone development

Greenstone workshop etc. It is powered by MediaWiki. Retrieved from <http://wiki.greenstone.org/wiki/index.php/GreenstoneWiki>.

Fig-2: Main Page GreenstoneWiki

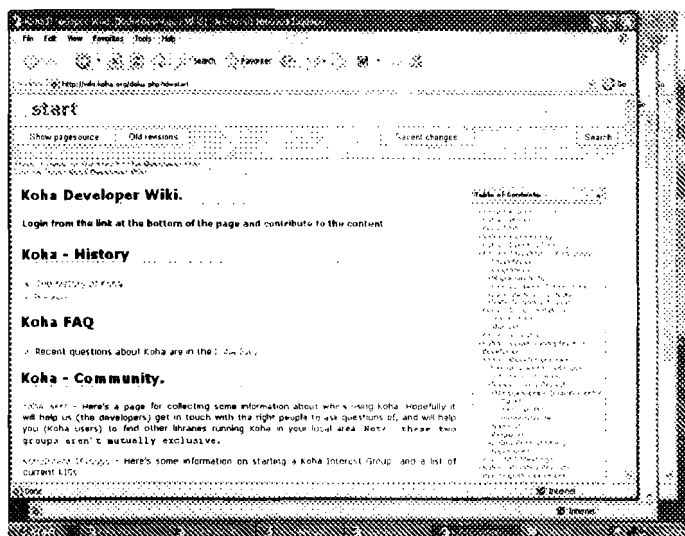


### 7.23 Koha Developer Wiki

This wiki provides about Koha information like Koha - History, Koha FAQ, Koha - Community, Koha - Events Planning, Koha - Installation & migration, Koha - Documentation, Koha - Translation, Koha - Volunteering for non developers, Koha -

Developer Links, Koha IRC Meetings, Koha - Related Projects, Non English Documents, Koha Wiki RSS Feed. It is powered by DokuWiki(PHP based). Retrieved from <http://wiki.koha.org/doku.php?id=start>.

**Fig-3 : Main Page of Koha developer wiki**



## 8. Conclusions

We can see that wiki is a major component for creating a dynamic library web portal. It may be a very helpful and important service on a particular topic for the library web portal. DSpaceWiki is a wiki service of <http://www.dspace.org/>. It provides information regarding "Dspace resources", "Dspace news/events", "Dspace projects", "Dspace manual/documentation (different version)", "Dspace trouble shooting" etc. And any one can upload his/her opinion regarding Dspace. The librarian can integrate this type of facility of a particular topic with their library web portal.

However, the wiki can provide better and

interactive service for the of library or any other organization. Being a interactive service, it is getting popularity and contains a big amount of information resources. Lastly we can say that it is the valuable tool of Web 2.0 for building a Library Web Portal.

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# COLLECTION DEVELOPMENT OF VIDYASAGAR UNIVERSITY CENTRAL LIBRARY : 1986-2006

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## ABSTRACT

From the very beginning of the establishment of the university, its central library has been suffering from both staff and fund. For the first four years of its regular post graduate teaching from 1986 it has received book grants only from the State Government. For the rest of the period of study the grants from the UGC are irregular and insufficient. This paper shows the grants received by the Central Library, Vidyasagar University during the period from 1986 to 2006 either from the State Government or from the UGC for development of its collection. This paper also depicts the distribution of grants to individual PG Departments and trend of their collection. Analysis of average cost of books of individual departments throughout the years under study is another feature of the study. Fund utilized for reference collection of the Central Library and the fund allotted by the university from its own fund for collection development has also been shown in this paper.

## Preamble

In 1976, the Government of West Bengal has decided to establish the Vidyasagar University and the UGC approved the proposal, subsequently that the university should have special features or new programmes which would augmented the existing academic resources; and that it would have a programme for the uplift of backward areas and removal of regional imbalances. Also as per advice of the UGC the State Government has appointed a Planning Committee in March 1979, and subsequently the Committee reported in October of the same year. In 1981, the

Vidyasagar University Act was passed and the official notice bringing some of the sections into operation was issued on 24th June, 1981. The first Vice-Chancellor took office on 29th September, 1981.

After a long process, the university started its actual journey in July, 1985 with thirty colleges of the undivided district of Midnapore hitherto affiliated to the University of Calcutta with an enrolment of approximately 23,000 students studying in these colleges. Post graduate courses were started in 1986.

The first seed of library was planted in the

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month of July, 1986 and started functioning from the Administrative Building officially. At the beginning there was no staff specifically for the library and the charge of the library was rested on Inspector of Colleges. Though the library is suffering from staff from the very beginning of its inception, still its functioning in all respects are satisfactory.

### **Objectives**

The objectives of this study are to find out the trend of book grants received by the university and also the trend of collection development of the central library during the period from 1986 to 2006 particularly with a view to examine the following:

- i) Trend of book grants received by the university either from the State Government or from the UGC.
- ii) Trend of distribution of book grants to the departments under two faculties of the university.
- iii) Trend of allocation of book grants for development of reference collection of the central library.
- iv) Total grant received by individual department for procurement of their books.
- v) Trend of collection development of the central library and also of the individual department.
- vi) Trend of average cost of books considering the departments collectively under the Faculty of Arts and Commerce and the Faculty of Science.

### **1. Book Grants and University Library**

The university started its academic activities in the year 1985 with just 6 post-graduate departments namely Commerce with Farm Management, Economics with Rural Development, Library and Information Science, Political Science with Rural Administration, Anthropology and Applied Mathematics with Oceanology and Computer Programming having only 214 students. It received its first book grant of Rs 7, 08,000 from the State Government in the academic year 1986-87. The book grant from the State was Rs 9, 75,000 in the second year i.e., in the session 1987-88, but it was reduced to Rs. 1,40,000 in the session 1988-89. The university started another 6 post-graduate departments namely Bengali, English, History, Philosophy and the Life-World, Chemistry and Chemical Technology, and Physics and Techno-physics in the session 1988-1989. But the book grants from the State were not much encouraging and in the session 1989-90 which was only Rs 3, 00,000. Again, book grants from the state were not satisfactory up to the session 1993-94. Though in this period another 3 science departments namely Botany and Forestry, Human Physiology and Community Health, and Zoology were started by the university. However, during the session from 1994-95 to 1999-2000 there was an increasing trend of book grants received by the university from the State Government. Though in the session 1998-99 and 2000-2001 the State Government has not allotted any grant for this purpose. During the rest of the session under study there was a decreasing trend of State Book Grants.

**Table 1: Trend of book grants (State & UGC) received by the university**

Sl. No.	Year	Grants Received			Total (Rs)
		UGC (Rs)	State (Rs)	Own Fund (Rs)	
1	1986	-	7,08,000		7,08,000
2	1987	-	9,75,000		9,75,000
3	1988	-	1,40,000		1,40,000
4	1989	-	3,00,000		3,00,000
5	1990	12,75,000	8,00,000		20,75,000
6	1991	-	1,72,000		1,72,000
7	1992	50,121	8,10,608		8,60,729
8	1993	4,00,000	3,00,000		7,00,000
9	1994	-	10,00,000		10,00,000
10	1995	-	10,00,000		10,00,000
11	1996	12,35,000	15,00,000		27,35,000
12	1997	9,00,000	18,80,000		27,80,000
13	1998	-	-		-
14	1999	-	18,10,000		18,10,000
15	2000	-	-		-
16	2001	19,50,000	25,000		19,75,000
17	2002	-	8,36,286		8,36,286
18	2003	4,60,000	7,80,000	40,645	12,80,645
19	2004	5,75,000	3,00,000		8,75,000
20	2005	-	6,00,000	23,910	6,23,910
21	2006	1,70,000	5,80,000	28,000	7,78,000
	<b>Total</b>	<b>70,15,121</b>	<b>1,45,16,894</b>	<b>92,555</b>	<b>2,16,24,570</b>

On the other hand, after four years from its regular activities the university received book grant from the UGC in the year 1990. It is also observed from Table 1 that during these 17 years from its first allotment of book grant the UGC has not allotted any grant for 8 different years and also there is a decreasing trend of allotment for the last three years.

Again, one interesting point has also been found from the Table that out of 21 years, during two years i.e., in the session 1998-99 and in 2000-2001 the university has not received any grant either from State or from the UGC.

Again within these 21 years the university has allotted only Rs 92,555 in three years from its own fund for the purpose of collection development in the central library.

## 2. Faculty-wise Distribution of Book Grants

Book grants received by the university either from the State Government or from the UGC or the amount spent from its own fund for this purpose have been presented in Table 1. But how those amounts have been distributed to the departments under the Faculty of Arts and Commerce and that of the Faculty of Science and how much amount have been spent for collection of

**Table 2: Faculty wise distribution of book grants**

Year	Grants Received			Total Rs.	Ratio of Grants of Depts. to Reference Collection	Percentage of Allotment for Reference Collection
	Faculty of Arts & Commerce Rs.	Faculty of Science Rs.	General & Reference Collection Rs.			
1986	3,48,000	1,60,000	2,00,000	7,08,000	2.54:1	28.25 %
1987	6,25,000	3,00,000	50,000	9,75,000	18.50:1	5.13 %
1988	80,000	40,000	20,000	1,40,000	6.00:1	14.29 %
1989	2,00,000	1,00,000	-	3,00,000	NIL	0.00 %
1990	10,60,000	9,05,000	1,10,000	20,75,000	17.86:1	5.30 %
1991	-	1,72,000	-	1,72,000	NIL	0.00 %
1992	4,17,137	4,19,539	24,053	8,60,729	34.78:1	2.79 %
1993	3,70,000	2,85,000	45,000	7,00,000	14.56:1	6.43 %
1994	4,80,000	4,20,000	1,00,000	10,00,000	9.00:1	10.00 %
1995	5,18,000	4,82,000	-	10,00,000	NIL	0.00 %
1996	10,64,000	15,84,000	87,000	27,35,000	30.44:1	3.18 %
1997	13,53,531	12,47,278	1,79,191	27,80,000	14.51:1	6.45 %
1998	-	-	-	-	-	-
1999	8,00,000	9,00,000	1,10,000	18,10,000	15.45:1	6.07 %
2000	-	-	-	-	-	-
2001	8,25,000	11,00,000	50,000	19,75,000	38.5:1	2.53 %
2002	3,04,000	5,22,000	10,286	8,36,286	80.30:1	1.23 %
2003	4,80,000	7,30,000	30,000	12,80,645	40.33:1	2.34 %
2004	4,56,525	4,18,000	-	8,75,000	NIL	0.00 %
2005	2,25,000	3,75,000	-	6,23,910	NIL	0.00 %
2006	3,58,710	3,91,000	-	7,78,000	NIL	0.00 %
<b>Total</b>	<b>99,64,903</b>	<b>1,05,51,582</b>	<b>10,15,530</b>	<b>2,16,24,570</b>		<b>7.23 %</b>

general as well as reference books has been presented in Table 2. The Table also represents percentage of allocation of grants to reference collection in a year. Ratio of amount spent for all the departments and to those for the procurement of reference books in a year is another feature of the Table.

The Table 2 shows that throughout these 21 years total amount spent for purchasing books for the Faculty of Arts and Commerce and the Faculty of Science is Rs. 99,64,903 and Rs 1,05,51,582 respectively. It has also been found from the Table that during the said period only Rs.

10,15,530 has been spent for procurement of General and Reference Books and which is about 4.70 % of the total amount spent for the purpose. It is reveal from the Table that during the period though book grants received by the university either from the State or from the UGC still no allotment has been made in 6 years for development of reference collection. Again allocation of book grant for collection of reference books is neglected year after year and which should affect the balanced book collection of a university library.

Table 3 : Yearly average grants received by the departments

Year	Average Grants Received by Individual Department	
	Faculty of Arts & Commerce (Rs)	Faculty of Science (Rs)
1986	87,000	80,000
1987	1,56,250	1,50,000
1988	20,000	20,000
1989	25,000	25,000
1990	1,32,500	1,29,285
1991	-	24,571
1992	52,142	59,934
1993	46,250	40,714
1994	60,000	60,000
1995	64,750	60,250
1996	1,33,000	1,98,000
1997	1,69,191	1,55,910
1998	-	-
1999	1,00,000	1,00,000
2000	-	-
2001	1,03,125	1,00,000
2002	38,000	43,500
2003	60,000	48,667
2004	45,653	27,898
2005	22,500	25,000
2006	32,610	26,086
<b>Average</b>	<b>74,887.27</b>	<b>72,358.68</b>

### 3. Yearly Average Grant of the Departments

Total amount spent for collection of books in different years under two post-graduate faculties and those of the reference collection has been presented in Table 2. It is not possible to represent department wise allocation of book grants in different years due to shortage of space. Therefore, average grants received by a department separately in two faculties have been presented in Table 3. It is evident from the

Table that as a whole distribution of book grants to the departments under the Faculty of Arts and Commerce is little more than that of the departments under the Faculty of Science. However average grants received by individual department considering all of these 21 years under the Faculty of Arts and Commerce and those of the Faculty of Science are Rs. 74,887.27 and Rs. 72,358.68 respectively.



**Table 4 : Total grants received by individual departments**

Departments	Grants Received			Total Grants (Rs)	Average Grants (Rs)
	UGC (Rs)	State (Rs)	Own Fund (Rs)		
Bengali	3,92,941	6,03,437		9,96,378	66,425
MBA	50,000	-	28,000	78,000	78,000
Commerce	3,68,368	8,92,572		12,60,940	70,052
Economics	4,13,067	9,23,938		13,37,005	74,278
English	3,72,941	7,65,224		11,38,165	75,878
History	4,17,941	6,58,767		10,76,708	71,781
Library Sc	3,74,955	9,39,793		13,14,748	73,042
Philosophy	4,17,941	7,20,014		11,37,955	75,864
Pol. Science	4,53,868	9,69,104		14,22,972	79,054
Sanskrit	50,000	65,000		1,15,000	38,333
Sociology	50,000	65,000		1,15,000	38,333
Gen. & Ref.	2,31,733	7,83,828	23,910	10,39,471	79,959
Anthropology	3,60,581	9,77,664		13,38,245	70,434
Aquaculture	-	1,10,651	40,645	1,51,296	37,824
Bio Medical	-	1,10,651		1,10,651	27,663
Botany	4,24,717	6,87,512		11,12,229	74,149
Chemistry	3,63,221	6,89,054		10,52,275	65,767
Computer Sc	45,000	1,28,651		1,73,651	34,730
Electronics	95,000	1,50,651		2,45,651	40,942
Geography	2,67,941	9,21,651		11,89,592	1,18,959
Mathematics	3,59,982	8,64,696		12,24,678	64,457
MCA	2,00,000	2,50,651		4,50,651	64,379
Microbiology	95,000	1,50,651		2,45,651	40,942
Physics	3,64,039	7,15,123		10,79,162	67,448
Physiology	4,22,941	5,96,234		10,19,175	67,945
Remote sensing	-	1,10,651		1,10,651	27,663
Zoology	4,22,941	6,65,729		10,88,670	72,578
Total	70,15,121	1,45,16,894	92,555	2,16,24,570	

#### 4. Trend of Grants Received by Individual Departments

Total book grants received by individual department throughout the period under study have been presented in Table 4. Again, as the departments were started in different years so to see the real picture, average grants received by individual department based on number of years they have received the grants has been shown in the Table.

It is evident from Table 4 that among the departments under the Faculty of Arts and Commerce yearly average received of book grants is highest in case of the Department

of Political Science with Rural Administration and lowest in the Department of Bengali, excluding those of the two self financing departments namely Department of Sociology and Department of Sanskrit.

On the other hand, among the departments under the Faculty of Science the yearly average book grant remarkably higher in case of the Department of Geography and Environment Management and lowest in case of both the Department of Bio-Medical Laboratory Science and Management and that of the Department of Remote Sensing and GIS.

**Table 5 : Book grants and trend of collection development of the central library**

Year	Total Grants (UGC & State)	Total No. of Books Purchased	Average Price per Book
1986	7,08,000	5,351	132.31
1987	9,75,000	4,659	209.27
1988	1,40,000	731	191.51
1989	3,00,000	2,376	126.26
1990	20,75,000	10,618	195.42
1991	1,72,000	319	539.18
1992	8,60,729	2,652	324.55
1993	7,00,000	2,220	315.31
1994	10,00,000	2,712	368.73
1995	10,00,000	4,619	216.49
1996	27,35,000	6,027	453.79
1997	27,80,000	6,960	399.42
1998	-	-	-
1999	18,10,000	5,001	361.92
2000	-	-	-
2001	19,75,000	5,504	358.82
2002	8,36,286	2,160	387.16
2003	12,40,000	2,915	423.93
2004	8,75,000	2,181	401.19
2005	6,00,000	1,412	424.92
2006	7,50,000	1,726	434.53
<b>Total</b>	<b>2,15,32,015</b>	<b>70,153</b>	

### 5. Book Grants and Collection Development of the Central Library

Above discussion is restricted on book grants received by the university either from the State Government or from the UGC and its distribution to different departments during the years 1986-2006. For this, available data were analysed based on two faculties of the university to show a comparative study between them. Again, in question of reference collection of the central library, percentage of its allotment to the total grant as well as ratio of grants of the departments to the total allotment for reference collection has also been prepared. Again, total grant received by individual department throughout these 21 years and average grants received by them in a year

are also prepared to know the trend of allotment of grants to them.

But how many books have been purchased by the central library out of the total grant received considering all the departments taken together and what is the average price per book in different years under study are presented in Table 5. It is evident from the Table 5 that there is an increasing trend of book grants due to the positive attitude from the State Government and also from the UGC. As a result, grant was highest in the year 1997 and which is amounted to Rs 27,80,000.00 ( State Rs 18,80,000.00, UGC Rs 9,00,000.00 ). For the rest of the years a decreasing trend of book grant has been observed. The Table also shows that a maximum of 10,618

Table 6 : Faculty-wise collection development

Year	Faculty of Arts & Commerce			Faculty of Science			General Reference
	Grant Received	No. of Books Purchased	Average Cost / Book	Grant Received	No. of Books Purchased	Average Cost / Book	
1986	3,48,000	2,428	143.32	1,60,000	1,299	123.17	1,624
1987	6,25,000	2,954	211.57	3,00,000	1,408	213.06	297
1988	80,000	441	181.40	40,000	124	322.58	166
1989	2,00,000	1,969	101.57	1,00,000	407	245.70	-
1990	10,60,000	7,186	147.50	9,05,000	2,902	311.85	530
1991	-	-	-	1,72,000	319	539.18	-
1992	4,17,135	1,593	261.85	4,19,541	975	430.29	84
1993	3,70,000	1,356	272.86	2,85,000	605	471.07	259
1994	4,80,000	1,571	305.53	4,20,000	702	598.29	439
1995	5,18,000	3,158	164.02	4,82,000	1,347	357.83	114
1996	10,64,000	3,544	300.22	15,84,000	2,468	641.81	15
1997	13,53,531	4,708	287.49	12,47,278	1,544	807.82	708
1998	-	-	-	-	-	-	-
1999	8,00,000	3,191	250.70	9,00,000	1,398	643.77	412
2000	-	-	-	-	-	-	-
2001	8,25,000	3,162	260.91	11,00,000	2,175	505.74	167
2002	3,04,000	1,022	297.45	5,22,000	1,069	488.30	69
2003	4,80,000	1,217	394.41	7,70,645	1,467	525.32	241
2004	4,56,520	1,354	337.16	4,18,480	797	525.06	30
2005	2,25,000	634	354.88	3,75,000	720	520.83	58
2006	3,86,688	1,130	342.20	3,91,312	570	686.51	26

number of books were purchased in the year 1990, where the average price per book in that year is Rs 195.42. Again, the average price per book was highest in the year 1991 and lowest in the year 1989 and which were amounted to Rs 539.18 and Rs 126.26 respectively. On the other hand, almost a positive increase of average cost per book has been observed from the Table. Therefore, addition of books to the library has gradually decreased year after year due to decreasing trend of book grants and also increased in average cost of books.

#### 6. Faculty-wise Collection Development

Number of books purchased out of the total grants received and average price per book in different years have been presented in Table 5. But number of books purchased

and average cost per book in different years out of the amount allotted collectively to the departments under the Faculty of Arts and Commerce and that of the faculty of Science have been presented in Table 6.

It shows from the Table that procurement of books by the departments under the Faculty of Arts and Commerce is higher than that of the faculty of Science. But rate of increase of the cost of books on science subjects is higher than that of the books on Arts and Commerce. Again, average cost of books is higher for the departments under the Faculty of Science throughout the years under study except for the year 1986. But considering all the departments there is a decreasing trend of the collection development has been observed particularly for the last 5 years.

**Table 7 : Department-wise collection development (Faculty of Arts & Commerce)**

Year	No. of Books Purchased by Department											
	Bengali	Buss. Adm. (MB A)	Comm-erce	Econ-omics	Engl-ish	Histo-ry	Lib. Sci	Philoso-phy	Pol. Sc.	Sans-krit	Socio-logy.	Gene-ral
1986	-	-	787	498	-	-	343	-	800	-	-	1,624
1987	-	-	1,134	882	-	-	500	-	438	-	-	297
1988	-	-	73	64	-	-	29	-	275	-	-	166
1989	1,174	-	-	-	236	271	-	288	-	-	-	-
1990	2,652	-	862	604	592	702	468	454	852	-	-	530
1991	-	-	-	-	-	-	-	-	-	-	-	-
1992	188	-	76	159	279	33	86	242	530	-	-	84
1993	417	-	130	86	136	225	77	204	81	-	-	259
1994	475	-	211	168	172	199	44	195	107	-	-	439
1995	1,462	-	327	246	189	218	141	334	241	-	-	114
1996	924	-	592	305	302	342	291	232	556	-	-	15
1997	2,172	-	576	320	322	291	135	357	535	-	-	708
1998	-	-	-	-	-	-	-	-	-	-	-	-
1999	1,310	-	575	239	233	205	104	324	201	-	-	412
2000	-	-	-	-	-	-	-	-	-	-	-	-
2001	1,082	-	564	207	312	215	135	322	325	-	-	167
2002	328	-	224	77	124	91	72	48	58	-	-	69
2003	455	-	188	111	113	155	38	54	103	-	-	241
2004	208	-	135	138	62	129	65	156	105	296	60	30
2005	-	-	72	52	55	62	49	39	49	203	53	58
2006	154	237	88	50	60	44	35	57	48	281	76	26
<b>Total</b>	<b>13,001</b>	<b>237</b>	<b>6,614</b>	<b>4,206</b>	<b>3,187</b>	<b>3,182</b>	<b>2,612</b>	<b>3,306</b>	<b>5,304</b>	<b>780</b>	<b>189</b>	<b>5,239</b>
<b>Avg</b>	<b>727.8</b>	<b>237</b>	<b>314.9</b>	<b>200.3</b>	<b>177.1</b>	<b>176.8</b>	<b>124.4</b>	<b>183.7</b>	<b>252.6</b>	<b>260</b>	<b>63</b>	<b>249.5</b>

### 7. Trend of Collection Development of the Departments under the Faculty of Arts and Commerce

A detailed collection development scenario for the departments under the Faculty of Arts and Commerce has been presented in the Table 7. Average yearly collection of the departments including those years in which no grant have been received has also been shown in the Table 7. It shows from the Table that in the year 1988, no grants has been allotted to the existing departments considering the poor allotment and also needs for the newly introducing subjects.

It is also observed from the Table 7 that total collection as well as average yearly collection of books is highest in the Department of Bengali and lowest in the

Department of Library and Information Science excluding those of the three self-financing courses. Trend of collection is gradually decreased year after year for all departments including the reference collection.

### 8. Trend of Collection Development of the Departments under the Faculty of Science

Unlike the previous Table, collection development of individual department under the Faculty of Science has been presented in Table 8. It shows from the Table that highest collection of books goes in favour of the Department of Anthropology.

Again, the average yearly collection of books is also highest for the same department. Yearly addition of new books to

Table 8 : Department-wise collection development (Faculty of Science)

Year	No. of Books Purchased by Department														
	Anth ro.	Aqua.	Bio Med.	Bot.	Chem	Comp. Sc.	Elect ro.	Geo.	Maths	MCA	Micro Biology	Physic	Physi ology	Remote Sensing	Zooology
1986	692	-	-	-	-	-	-	-	607	-	-	-	-	-	-
1987	799	-	-	-	-	-	-	-	609	-	-	-	-	-	-
1988	51	-	-	-	-	-	-	-	73	-	-	-	-	-	-
1989	-	-	-	-	259	-	-	-	-	-	-	148	-	-	-
1990	663	-	-	482	237	-	-	-	728	-	-	228	322	-	242
1991	-	-	-	196	-	-	-	-	-	-	-	-	87	-	36
1992	618	-	-	112	82	-	-	-	16	-	-	95	-	-	52
1993	65	-	-	132	91	-	-	-	101	-	-	51	68	-	97
1994	94	-	-	89	74	-	-	-	302	-	-	04	68	-	71
1995	189	-	-	144	54	-	-	339	334	-	-	146	58	-	83
1996	418	-	-	151	99	-	-	976	418	-	-	218	98	-	90
1997	353	-	-	135	94	-	-	70	337	-	-	218	154	-	183
1998	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1999	240	-	-	63	64	-	-	121	242	368	-	116	79	-	105
2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2001	296	-	-	91	82	-	179	113	299	771	42	165	74	-	63
2002	50	-	-	46	70	142	262	38	105	171	49	90	23	-	23
2003	71	39	31	48	82	188	205	132	155	131	40	162	22	114	47
2004	42	17	26	54	34	73	133	57	100	18	59	92	40	22	30
2005	31	21	20	34	36	72	96	43	95	69	35	59	41	52	16
2006	28	19	14	31	53	53	99	56	83	57	22	12	20	10	13
<b>Total</b>	<b>4,700</b>	<b>96</b>	<b>91</b>	<b>1,808</b>	<b>1,411</b>	<b>528</b>	<b>974</b>	<b>1,945</b>	<b>4,604</b>	<b>1,585</b>	<b>247</b>	<b>1,804</b>	<b>1,154</b>	<b>198</b>	<b>1,151</b>
<b>Avg.</b>	<b>22.8</b>	<b>24</b>	<b>22.8</b>	<b>106.3</b>	<b>78.4</b>	<b>105.6</b>	<b>162.3</b>	<b>162.1</b>	<b>219.2</b>	<b>198.1</b>	<b>41.2</b>	<b>100.2</b>	<b>67.9</b>	<b>49.5</b>	<b>67.7</b>

the departments is not satisfactory. Again the Table also reveals that there is a decreasing trend of the addition of new books for all those departments under the Faculty of Science.

### 9) Findings

- i) Book grants received by the university either from the State Govt. or from the UGC are irregular and also not satisfactory.
- ii) Collection development of the departments is gradually decreased due to increasing trend of the cost of books, introduction of number of departments year after year and decreasing trend of book grants received from the State Government also from the UGC.
- iii) Considering number of departments in two faculties, departments under the Faculty of Arts and Commerce are

allotted more fund than that of the departments under the Faculty of Science probably due to their dependency on printed books.

- iv) Book grant has not been allotted for collection of reference books in six different years. Again, only 4.7 % of the total book grant has been utilized for collection of reference books.
- v) Ranking of first five departments on the basis of yearly average book grant received by them in the Faculty of Arts and Commerce are Political Science with Rural Administration, English, Philosophy and the Life-World, Economics with Rural Development, Library and Information Science and in the Faculty of Science, are Geography and Environment Management, Botany and Forestry, Zoology, Anthropology, Physiology and Community Health.

- vi) Considering all the departments taken together the average cost of book is highest in the year 1991 and which is amounted to Rs 539.18. This is due to allotment of total grant to the science departments in that year. Again, it is lowest in the year 1989 and which is only Rs 126.26.
- vii) Trend of collection development of the central library is gradually decreased year after year due to increase in the cost of books and also decrease in grants received either from State Government or from the UGC.
- viii) Moderate numbers of books are there for those departments which were started at the beginning of the university. But for all other departments the number of books are not encouraging.

### Conclusion

Book grants received by the university from State Government and also from the UGC

during 1986-2006 have been presented in the study. Distribution of the said grants to different departments, procurement of books and average cost of books of individual department, development of reference collection of the library have also been analysed in the study from different angles. Uniform pattern of distribution of grant as well as development of collection has been found among the departments. But it requires to take special attention for development of reference collection of the library. The library is also equipped with alternative sources of information to cope with the advances in information and communication technology (ICT). Therefore, the users of the library are able to fulfill their information needs both from the library collection as well as from the world of knowledge.

### Reference

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# USE OF INTERNET BY THE ACADEMIC COMMUNITY WITH A SPECIAL REFERENCE TO VIDYASAGAR UNIVERSITY

Gourhari Jana\*

## ABSTRACT

The growth of Internet was one of the most remarkable phenomena of the last decade of twentieth century. The Internet is paving the way for a great leap in the field of higher education and research. Electronic information resources relevant to the sciences and social sciences are being made publicly available world-wide and the internet offers potential to the users to access these resources from their desktops. Lack of Internet skills leads the users into difficulties when attempting to search for and retrieve information of different subjects. Under this objective condition, the present study centres round the investigation of the use of internet by the academic community (teacher, research scholars and P. G. students) in science and social sciences at Vidyasagar University, West Bengal. The study is based on the sample survey of 327 members of academic community belonging to different branches of science and social sciences at Vidyasagar University. It investigates the purposes for which the Internet is being used, frequency and length of use of Internet, prior skills in the use of Internet, knowledge of search engines, use of different types of Internet services for exploring science and social science resources, difficulties in browsing the Internet, and the physical facilities required for providing satisfactory environment for using the Internet services. The study observed that the respondents, particularly those who belongs to social science disciplines are making a low use of the Internet.

The potential of Internet as a source of information of any kind on varied disciplines is yet to be fully exploited by the academic community as the majority of them are using it mainly for e-mail. The need for extensive training programme on the utilization of Internet resources by the academic community of Vidyasagar University has been emphasized.

## 1. Introduction

Internet is holding enormous volumes of information in each and every field of human knowledge. It hold primary, secondary and tertiary sources of information in wide range of subject fields and in varying formats. The primary

sources available include e-Journals, monographs, reports, patents, standards, individual articles and preprints, data files. Internet also offers electronic resources including reference sources, dictionaries, encyclopedias, and directories etc, many of them are free of charge.

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The growing importance of Internet can be observed from the coverage of Internet and related literature in primary scientific Journals.

The aim of library and information professional is to provide the right information to the right user at the right time. In a conventional library, search, and retrieval is easy because the collection is maintained in an organized way. With the rising cost of print based information and limited library budgets, conventional libraries are not able to satisfy the entire needs of the users. Internet has made a greater impact on library and Information services by offering new modes for information delivery and a vast variety of information sources. In the recent years, our world of librarianship has become an inter-connected global community. Its extensive application has changed fundamental roles, paradigm shift and organizational culture of libraries and its professionals as well.

## 2. Statement of the Problem

Recognizing the impact of Internet on the academic community, the problem of this study has been formulated as follows :

"Use of Internet by the academic community with a special reference to Vidyasagar University".

The problem can be expressed in one or more descriptive statements. But in majority cases, such statement becomes readily amenable to conversion into a question of a set of interlinked answers. A close examination of the statement of the problem as furnished above suggests that it is readily amenable to be converted into set of

substantive questions, the questions that are warranted to be answered for this purpose of research study would be as follows :

- i) To what extent are the Academic community of Vidyasagar University uses the internet resources and Internet ?
- ii) What are the different internet services used by academic community of Vidyasagar University ?
- iii) How well the Vidyasagar University web mail fulfills the expectation of academic community of Vidyasagar University?
- iv) To what extent does the academic community of Vidyasagar University utilize different types of search engines?
- v) Is there any infrastructural and communication difficulties faced by the academic community during the time of browsing the Internet.
- vi) To what extents are the academic communities are satisfied with the use of Internet as global information repository and as local infrastructure and communication facilities?

## 3 Objectives of the study

### 3.1 General objective

The main objective of the present study is to assess the use of Internet resources and services among the academic community of Vidyasagar University.

### 3.2 Specific objectives

The specific objectives of this study are to know:



- a) How long the academic communities of Vidyasagar University have been using Internet ?
- b) The place/s of accessing Internet and how often they access ?
- c) The time spent, and the frequency of use of internet resources and tools.
- d) The purposes for which the Internet is being used.
- e) The frequency of use of different file formats and the place/s of main access.
- f) The subject/s on which they search websites and the web pages/home pages created by them (it any).
- g) Whether they use it on their own or delegate the search to others and have they received training in the use of net or not.
- h) The relation between prior computer experience and the use of Internet.
- i) To ascertain the extent of use of Internet services.
- j) To ascertain the mostly used e-mail service provider.
- k) To find out whether the members of the academic community use any blog site and to know whether they subscribe to any free electronic newsletter/Journals or any TOC services.
- l) To find out the problems faced by the users while using various Internet services.

#### **4. Methodology**

Survey method basically consists of questionnaire and interview methods. This

section and the following subsections highlight the details about the samples, the nature and form of data collected, tools like questionnaire and interview schedule framed and administrated, analysis, compilation and presentation of data.

##### **4.1 Identification and selection of the sample**

It is not possible to collect data through questionnaire and interview methods on use of Internet by all members of the academic community of Vidyasagar University. This is because of various limitations such as those of time, human factor and financial resources. To make the study representative, method of sampling has been adopted. The primary purpose of any sampling procedure is to obtain a sample, within the restrictions imposed by its size, which will reproduce characteristics of the population with greater accuracy. The sample collection for this study consists of four major categories of academic community of Vidyasagar University and the distributed class measure of data collection for this survey was as follows : five percent (5%) of the students (1st year & 2nd year PG) fifty percent (50%) of the research scholars, hundred percent (100%) of faculty members and 25% of the guest teachers against official enrolled on academic session 2007-2008. The total sample population of academic community of Vidyasagar University covered in this.

##### **4.2 Compilation and presentation of data**

The collected data are bits of information. Individually, they do not mean anything, but

through the process of data-organization, analysis and interpretation, they are transformed into evidences. Here the collected data were divided into different user categories. Category wise findings were then tabulated so that systematic analysis of data becomes convenient and conclusions are drawn. At each stage of work of tabulation, percentages were calculated whenever necessary. Here the data collected are presented by means of text, tabular and semi-tabular devices under the suitable headings, graphical presentation of data are used like pie chart, bar chart have also been used.

## 5. Results of the Survey

### Characteristics of the study population

It shows that out of 327, more than one third of the study population consisted of student (37%), while the rest of the population consisted of Teachers (35.47%), Research scholar (9.17%), and Guest teachers (18.34%).

### Sex wise distribution of Users

The population studied consisted of a larger number of representatives from the teaching Community than from any other category but, on the whole, it is representative of all the departments. Majority of the academic community consisted of male population (74%) than the female population (26%). The highest number of population understudy were less than 25 years (40%) of age, 16.85% belong to age group of 25-35 years, 18.67% belongs to the age group of 36-45 years, while 24.48% belong to the age group of

more than 45 years.

### Use of Library by the academic community of Vidyasagar University

It shows that out of 121 students about 10 students use the library for 1 - 2 hours and 20 uses the Library more than 2 hours but less than 5 hours in a week, 18 students uses 5 - 10 hours in the library, 40 students uses 10 - 15 hours, 22 students uses 15 - 20 hours, 11 students spend more than 20 hours, in the library in a week; But among 116 teachers 50 of them use only 1 - 2 hours in a week in the library, another 20 teachers use more than two hours but less than five hours in a week in the library, another 20 teachers uses more than two hours but less than five hours, 20 uses of them more than five hours but less than 10 hours, but less than 15 hours, 9 of them uses more than 10 hours in a week and 11 teachers uses the library 15 - 20 hours, only six teachers use the Library for more than 20 hours in a week. Among 30 scholars 10 of them spend 1 - 2 hours in the library in a week, another 12 scholar spend 2 - 5 hours in the library only 6 scholars spend more than five hours but less than 10 hours and the remaining two do not use the library at all.

Out of 60 guest teachers 35 of them do not use library at all and 15 of them uses library 2 - 5 hours in a week and the remaining 10 use library more than 5 hours but less than 10 hours.

### Experience of the internet use

Out of 121 students 60 student have started using the internet for more than one year, where as 30 students started for more than

six months after their admission to the 1st year P. G. classes, 12 students used the internet between 3-6 months, 8 students between 1-3 months and 11 respondents started using Internet less than one month. The analysis clearly indicates that most of the student communities have started using Internet after their admission in the University. But in case of teachers out of 116 teachers 109 teachers (94%) have started using the internet for more than one year, only 4 teachers started for more than six month and the remaining 3 teachers between 3-6 months. More than 92% scholars and guest teachers have started using the Internet fore more than one year. Out of 327 respondents it is found that 76.7% of the academic community have experience of using the internet more than 1 year : (students 23.9%) teachers 43.4%, scholars 10.3%, guest teachers 22.3%).

#### **Frequency of Internet use**

In order to assess the frequency of using Internet services, the time gap has been classified into five different categories. It is revealed that 48.01% of academic community use the internet everyday [(students 27.38%), Teachers (38.21%), scholars (14.01%) and Guest teachers (20.38%)], 37.92% use 2-3 times in a week [(students 37.09%, Teachers 41.93%), Scholars 6.45%, Guest teachers 14.51%], 9.78% use internet once in a week. 3.66% use 2 - 3 times in a month and only 0.61% use internet one in a month. On an average majority of the users of Vidyasagar University academic community use the internet almost everyday or 2- 3 times in a week.

#### **Types of Internet resource**

In order to explain the extent of the use of internet resource the scholars have been classified into four different categories such as teachers (1), students (2), scholars (3) and guest teachers (4). It indicates that more than 40% teachers, students and scholars are interested to use learning objects, scholarly publication, educational inf. scholarship and projects but they are not interested to use patents, theses, blogs resources.

#### **Place of access to Internet by the academic community**

The place of access to internet varies from one community to another. The teaching community out of 116 teachers about 114 teachers (98.2%) accesses the internet in their own department. Only 2 of them have informed that they do not use internet in their own department but they use the internet at Vidyasagar University Library and home. The teaching community not only use the internet in their own department but also 28 of them access the net at home, 23 access the net outside and only 10 of them access the net in the Library.

Out of 121 students 34 of them use the net in their own department, 30 students use the net in the Library, 46 students prefer to access the internet in cyber cafe and only 10 of them use it in their home. 100% scholars and more than 60% guest teachers access the net in their own department.

### **Formal training in computer operation**

Out of the total 327 internet users 68 (58.62%) teachers, 72 (59.5%) student, 12 (40%) scholars, 32 (53.3%) guest teachers had formal training in computer operation and out of 327 internet users 143 had no formal training in computer operation. Of the total community 56.26% had formal training in computer operation and 43.73% had no formal training.

### **Prior computer experience of Internet users**

Out of the total 327 internet users 84 (72.4%), 78 (64.46%) students, 40 (66.66%) guest teachers and 18 (60%) scholar had prior computer experience. Of the 327 internet user 107 had no prior computer experience. It is also found that among the total community 67.27% had prior computer experience and 32.72% had no prior computer experience.

### **Methods of Acquiring Internet skills**

A significant proportion of the users appears to have acquired the requisite skills to use the internet by self instruction through trial and error. It is about 51.07%. About 48.31% users have learnt the internet through assistance from colleagues. It is interesting to note that only 10.7% internet user have taken help from Lib. through internet orientation programme.

### **Email service providers**

The most widely used e-mail service provider is Yahoo (74.92%). The next widely used e-mail service provider after yahoo is Rediff (38.83%) followed by the E-mail (32.41%) and V. U. web mail

(28.74%). The other e-mail service providers used by the academic community are G-mails (16.51%), Hot mails (19.87%) etc. The teaching community prefers yahoo (87%) as an e-mail service provider. It is interesting to note use of e-mail service provider like mail city, sat yam, mantra is very low.

### **Purpose of Internet use**

It indicates, out of 327 users 90.21% users uses E-mail services, 71.86% users uses new topics and 68.50% uses preparation of assignments/seminar. For factual information 51.98% fulfil their purpose for using this sight. Totally 62.38% or respondents are browsing electronic Journal and 46.17% of users are using data base. But the use of digital archives, multimedia conferencing and on-line theses is not satisfactory. 53.82% of the respondents including 30 teachers, 75 students, 23 scholars & 48 guest teachers are searching for job. 54.43% download their information from Internet service. Out of 327 users 90.21% users uses E-mail services, 71.86% users uses new topics and 68.50% uses preparation of assignments/seminar. For factual information 51.98% fulfill their purpose for using this sight. Totally 62.38% or respondents are browsing electronic Journal and 46.17% of users are using data base. But the use of digital archives, multimedia conferencing and on-line theses is not satisfactory. 53.82% of the respondents including 30 teachers, 75 students, 23 scholars & 48 guest teachers are searching for job. 54.43% download their information from Internet service.

### **Internet services by the academic community**

It is interesting to note that the main service of internet is of sending e-mails (95.10%). It indicates the predominant use of Internet as a communication tool rather than for using electronic Journals (59.63%), or Job markets (43.42%) or as a communication and interaction services (35.16%) or bibliographic data bases (29.96%). A large majority is not using all the resources and services.

### **Favorite search Engines**

The most widely used favorite search engine is Google (80.12%). The next favorite search engine after Google is yahoo, Which is being used by 55.04% of the users, followed by Google scholar (23.24%) and AltaVista.

### **Search results and time Justification**

One question was asked: whether the search results Justify the time spent in searching. 24.77% of respondents reported strong Justification of time. 62.38% (including 55.17% teachers, 72.72% students, 56.66% researcher and 10.70% guest teachers) respondents reported that search results some what Justify the time spent in searching.

12.84% of the respondents are of the opinion that the search results do not Justify the time spent in searching.

### **Advance search features of Search Engines**

Advance features of search engines indicates that, out of 327 respondents 25%

gives first rank to Boolean operators (AND, OR, NOT), 18% second rank and 15% give third rank, For Proximity operators 19.2% users give first rank where 11% give second rank. For relational operators, 10.5% of users give 1st rank, while 7.3% of users give second rank.

### **Use of Meta Search Engines for information retrieval**

Out of the total 327 users, only 5 teachers uses Lycos, 02 teachers uses Dog pile and 3 teachers uses all the web. Only 2 students use all the web, 3 scholars uses Lycos and 04 guest teachers uses Lycos and all the web.

### **Subscribe to TOC services**

One question was asked whether the academic community subscribe any TOC (Table Content) services. Among the respondents 11.9% subscribe Elsevier, 5.81% subscribe the academic press and 4.89% subscribe kluwer on-line.

### **Acquaintance with search engines**

Of the total 327 users who reported using different search engines, 38.53% became acquainted with them through their colleagues, 25.38% learned about search engines from on-line help, 15.59% of the respondent with search engines using professional literature and 12.84% acquainted with search engines through formal training.

### **Infrastructure and communication difficulties faced in browsing Internet:**

57.18% of the survey respondents are facing Band with (speed) difficulties in

using the Net. 33.02% (46 teachers, 24 students, 15 scholar and 23 guest teachers) opined that the present no. of terminals are inadequate.

31.8% of respondents (22 teachers, 48 students, 22 scholar, and 12 guest teachers) are facing non-availability of down loading facility as a printing form.

34.25% are not satisfied with computer performance. Tab 20 has highlighted infrastructural and communication difficulties faced while browsing internet.

#### **Access mode of Internet connection**

Out of 327 users 38.22% (44 teachers, 48 students, 11 scholars and 22 guest teachers) do not aware of the access mode of the Internet connection. 35.77% respondents (42 teachers, 52 students, 8 scholars and 15 guest teaches) use dial up access. 15.59% use others mode of access (VSAT and Broadband).

#### **Difficulties faced in access and retrieval information from Internet**

56.57% (80 teachers, 57 students, 18 scholars, and 30 guest teachers) opined that internet system of Vidyasagar University take long time to get connected to a particular site. 17.43% respondent opined that they are unaware of the important sites, in their subjects. 18.34% respondents reported of retrieval of irrelevant materials. 10.70% respondents expressed their lack of knowledge in formulating queries.

#### **Download of web information**

The analysis clearly indicates that 46.48% users down load their information from the

web as a text file. 43.11% users download their information in PDF format files and 22.62% download information as HTML files. 15.90% users download their information from the Text File as well as HTML file. 9.48% users load their information from the video and audio files and 9.17% download of web information through computer programmes.

#### **Local infrastructure and communication facilities : Users' satisfaction**

The extent of user satisfaction in respect to local infrastructure and communication facilities of Internet services indicate that 24.46% respondents is highly satisfied regarding timings, 36.69% is only satisfied regarding timing and 27.52% respondents are not satisfied with timings, 18.34% of respondents are highly satisfied about the number of terminals and 41.28% respondents are not satisfied about the number of terminals. 9.78% respondents did not give any opinion about the number of terminals.

39.75% of the respondents are satisfied with the furniture but 30.58% are not satisfied with the furniture and 14.37% did not give any response regarding this matter.

36.69% of users are satisfied with the speed of downloading and 30.58% of users are satisfied with the printing facilities. But 47.40% of users are not satisfied with the speed of downloading and 53.51% of users are not satisfied with the printing facilities. From the analysis it is clear that half of the internet users are not satisfied with the Band width (speed) and 41.28% are satisfied about assistance from the library

staff. 4.58% users were silent about printing facilities and 13.76% did not give any response regarding staff Assistance.

#### **Use of internet as global information repository : Users' Satisfaction**

The extent of users satisfaction in respect of the use of Internet as global information repository shows that 56.88% of the respondents (74 teachers, 64 students, 16 scholar and 32 guest teachers) are satisfied with the use of Internet as global information repository. 21.40% of respondents are highly satisfied and 14.06% of respondents are not satisfied with the use of Internet as global information repository. From this analysis it is clear that 21.40% users are highly satisfied with the use of Internet as global information repository. About 7.64% users were silent about this use.

#### **Suggestions**

Based on the findings of the study; the following suggestions are made to improve the use of Internet among the academic community of Vidyasagar University:

1. More number of terminals should be installed in every department and the number of terminals should be shared equally among the students, researchers and faculty according to their strength. There should be more terminals in the central library also so that the students can access information easily.
2. There is a need for extensive training programme for all the categories of academic community. The Internet orientation programme conducted by the Central Library does not appear to be very popular among the Internet user community. The orientation programme should be done department wise in the Central Library with practical demonstration. The date, time and name of the department should be notified earlier in consultation with the Head of the concerned department.
3. Some computers with floppy disk drives should be installed not only at some other locations in the library but also in every department so that Internet users can download relevant information from the NET to floppy and can read it leisurely using these PCS. Thus they can spare more time in searching information on the Net.
4. Printers should be installed in the departmental Internet centers so that the users can take printout of important documents. This facility may be restricted to faculty members and research scholars. The facility may be extended to students against of nominal fees.
5. The present time slot should be extended to at least 8-30 a.m to 8-30 p.m for all the categories of users.
6. In order to solve the slow downloading problem of Vidyasagar University, the computer center should acquire high speed Internet connection with maximum band width.
7. The e-mail server of the center should be configured and a local E-mail address should be provided to every

user and capacity of server should be increased.

8. Staff must be skilled to browse the Net efficiently.
9. The computer center should create a web page with links to important sites in different subject fields in a classified order or computer center should have one notice board on which information regarding latest websites must be displayed with detailed addresses.
10. To avoid difficulty in accessing information at peak hours, the timing of the internet service should be fixed for every members of the academic community.
11. A large no. of Internet users are not satisfied with the infrastructure facilities available in Vidyasagar University. So the number of terminals should be increased. printing as well as multimedia systems should be provided.
12. Webliography on different subjects may be compiled by the library in order to alert the users about the important sites falling within the purview of their study and research.

### Conclusion

The concerned stake holders should make an attempts to provide the necessary infrastructure facilities such as high speed network connection to access the e-resource and to conduct some training programmes for the library professionals and user orientation programmes for users for the effective use of internet facilities,

and also to conduct seminars and conferences on latest trends in library and information science. Internet has revolutionized and has brought sea change in the entire information handling process. It has undergo virtual explosion and is still growing widely at a staggering pace.

The Internet is one of the best medium today for getting relevant information in time and we should be prepared accepting the challenge of the change of technology to be remained in the race of modernization. This is more applicable for the students of Library and Information Science to survive and compete with the future challenge.

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# iSCHOOLS AND LIS EDUCATION SYSTEM

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## ABSTRACT

Schools of information or iSchools have originated either from the library and information science schools through modernization and restructuring of the existing academic course curriculum or as a new school of education. iSchools emerged during late 1980s in USA and subsequently spread to other countries. iSchools provide interdisciplinary education and research focusing to information, people and technology. In the present study a website-based research has been carried out to understand the involvement and influence of LIS and other disciplines in the curriculum of iSchool. The curriculum vitae of faculties from America's top three iSchools and the MS courses offered by these iSchools have been analyzed for this study. The analysis reveals that the ischools are truly interdisciplinary in nature. Considerable parts of iSchool curriculum involve applications of other disciplines too in addition to LIS and information technology. In curriculum the LIS contents is ~55%, IT ~21% and other subjects are in 10% to 28 % range.

## 1.0 Introduction

Schools of Information or iSchools are relatively new academic programs designed to address the society's contemporary needs emerged due to interdisciplinary R&D activities, and digital era. iSchool is a graduate education and research community that crosses the boundaries of law, economics, sociology, business, library science, engineering, design, publishing, linguistics, computer science, and information science. The origin of iSchools dates back to the mid-1980s when more than twenty library science programs were ceased to maintain their American Library Association (ALA) accreditation in the United States (U.S.)

including some prestigious PhD programs namely Columbia University and the University of Chicago. Under the threat of closure, many schools attempted for redesigning of their programs to address the changing demands of the society influenced by the ubiquitous availability of information and digital developments. Amidst fluidity, iSchools have been evolved of the three principal ways:

1. re-purposing of pre-existing schools; or
2. merging existing schools by disparate academic programs; or
3. creation altogether new programs by hiring faculty from outside the institutions.

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The original impetus for organizing and publicizing the iSchools came from a group of schools now called the iCaucus. The iSchool movement is made up of novel academic programs that embrace new intellectual and professional challenges in a world awash in information. The iSchool degree program prepares professionals who can :

- ↳ analyze information needs;
- ↳ design organizational structures;
- ↳ evaluate information technology approaches;
- ↳ provide human resource support; and
- ↳ develop management strategies to meet organizational needs as they evolve over the time.

It is creating a new class of professionals qualified to address these complex challenges. The iSchools are interested as they focus to study the relationship between information, people and technology. This is characterized by a commitment to learning and understanding the role of information in human endeavors. The iSchools take available expertise in all forms of information required for progress in science, business, education, and culture. This expertise must include understanding of the uses and users of information, as well as information technologies and their applications<sup>2</sup>. The iSchools are involved in inventive course design and creating platform for multidisciplinary research community keeping in view the changed information scenario and anticipated future of universal seamless access and subsequent use of information by the

knowledge workers. The present study is an attempt to identify the influence of library science as a discipline in iSchool curriculum. Therefore, the present research has been focused on the iSchool course curriculum and the subject specialization of the faculties involved in delivering new class of professionals who will primarily be involved with information activity.

## 2.0 Objectives

The objectives of the study are:

- i) To identify the interdisciplinary characteristics of the iSchools.
- ii) To analyze novelty of the iSchool curriculum.
- iii) To understand the impact of LIS in iSchool curriculum.

## 3.0 Scope and Limitations of the Study :

- i) The study is based on the information available from the website of American top three library science schools.
- ii) Only MS courses offered by the America's top three library science schools are studied. Subject of specialization in MS programs are not studied here. Programs like certificate courses, continuing programs etc. offered by the iSchools are also not part of this study.
- iii) The core courses and secondary core courses of the MS programs have been studied. The other aspects of the MS programs like elective subjects, subjects of project reports etc. are not the part of this study.

- iv) The Doctor of Philosophy degrees programs offered by the America's top three iSchools are not the part of this study and therefore, the concerned faculties who are teaching only doctoral degree courses are not the part of this study.
- v) Faculty members (two only) whose subject specialization is not available on the concerned website are not the part of this study.

#### 4.0 Methodology

The study is carried out with:

- i) Survey of iSchool literature which includes articles published in journals, conference proceedings, letters etc.
- ii) U.S. News 2009 ranking for America's top library school programs. US. News ranked 50 master's degree programs in the United States that are accredited by the ALA. The list comprises of iSchools and library schools together. Website information of America's top library science schools have been taken to identify the unique inter-disciplinary nature of the iSchool Curriculums.
- iii) The iSchools are involved in interdisciplinary research and education. Therefore, identification of every specific subjects and their involvement in a cross-domain research environment is important. The educational background, experience and subject of interest of the scientists or educators are the primary indicators to adjudge the nature of education and research system. The number of faculties and

their varied specialization of teaching subjects have been taken to identify the depth and centrality of specific subject (s) in an inter-disciplinary course curriculum. Accordingly, the website of America's top three LIS Schools visited to identify and collect the following information :

#### A. The Curriculum Vitae of the faculty members regarding their

- a) Concerned subject(s) of teaching,
- b) Subject specialisation (academic career) of the faculties,
- c) Credit or UG/GR hours of the subject taught by the faculties.

#### B. Information regarding MS courses

- a) Syllabus of courses.
- b) The specific subjects taught in the core courses, and secondary core courses
- c) Credit or UG/GR hours of the specific subjects required for the course(s).

This study is to understand the centrality of the specific subjects kept in the iSchool course curriculum. The extent of specific subject(s) variety can help to find out the inter-disciplinary nature of the iSchools. The study of credit or UG/GR hours is explaining the relative importance of subjects in contemporary iSchool education. The study on above listed parameters would be helpful to understand the intent and path of iSchool education and its evolution.

#### 5.0 iSchool Course curriculum and LIS

The most basic requirement of research and curricular scholarship in the area of information science is to serve as showcase

of multi-and interdisciplinary grasp and synthesis of dynamic knowledge. In last twenty five years the convergence and integration of computer, communication, electronics and mechanical technologies have infused revolutionary interest to address global issues of information / knowledge delivery and management. Information can not be defined in its uniqueness as it is always processed in context of the situation or discipline. Therefore, information has been defined as the process, not the product. The process being the contextual action indicates its multidisciplinary nature. Hence, the process in itself is multidisciplinary or multi directional by nature and it works as per the given situation or subject. It can not be unidirectional to deal with specific singular situation or subject. The definition of information programs and degrees demands clarification with respect to their uniqueness to both inter and intra disciplines. All disciplines such as information technology, computer science, information systems, management information systems, library science, telecommunications, new media, information science and computer engineering deal with information and add value, define it in their own context of broad information education landscape relevant to them. The words *information, science(s), technology, computer, informatics, library and systems, among other terms*, have been incorporated and used in every combination of suitability in nomenclature of programs. These programs are typically characterized by their engagement in the design, development and /or use of information and communications techn-

ologies, or they can be found to be connected to many of the traditional fields that define the modern academy. Sometimes it is important to study and analyze the similarities of these programs or fields rather than their differences. As a field or discipline of inquiry, the iSchool has centered its educational and research efforts around the hub of information creation, utilization, add value, analysis, synthesis, implementation and measure impacts, input and out come by drawing multiple theories, methods, disciplines and perspectives. By embracing this philosophy, it is infusing synergetic power leverage to address social needs by articulating and challenging the increasing digital, global society. The present study is to identify the share of different disciplines in iSchool education. Since the iSchools are in the process of evolution from the LIS Schools of various universities aiming to cleavage a study of the relationship between information, technology and people, therefore, the share of LIS and Information Communication Technology (ICT or IT) as subjects in iSchool curriculum is studied separately. For this study the course curriculum and subject specialization of faculties of America's following top three iSchools are consulted.

## 6.0 Result and Discussion

The analysis of the website information of the America's top three iSchool reveals:

- All of the America's top three library science schools offer Master of Science (MS) in library and information science. Analysis of the course

Sl. No.	Name of the Institution	Rank (US News)
1	The University of Illinois Graduate School of Library and Information Science (GSLIS)	1
2	University of North Carolina-Chapel Hill: School of Information and Library Science (SILS)	1
3	The School of Information Studies at Syracuse University	3

curriculum regarding the subjects taught and their respective UG or GR Hours or Credit reveals that the extent of importance of IT is consistent in all the schools which is shown in Table-1.

The M.S. students of GSLIS are offered personalized program as per their desire. This is a unique curriculum which only requires the completion of two courses each of three hours namely "Information Organization and Access" and "Libraries,

Sl No.	iSchool	UG or GR Hours / Credit for LIS	UG or GR Hours / Credit for IT	UG or GR Hours / Credit for Other Disciplines
1	The University of Illinois Graduate School of Library and Information Science (GSLIS)	6 Hours compulsory	optional	Optional
2	University of North Carolina-Chapel Hill; School of Information and Library Science (SILS)	12	3	6
3	The School of Information Studies at Syracuse University	13	3	3

Information, and Society" out of total 40 hours necessary to complete the M.S program. Therefore, the students can choose a wide range of elective courses to complete the MS program of remaining 34 hours. The elective courses include specifically designed courses suited as per academic and professional backgrounds of the students to achieve the desired goals and objectives.

- In addition to the existing MS programme in LIS courses, all the top

three library science schools of America offer interdisciplinary courses which are entirely separate programs. The students simultaneously are not entitled to get admission in both types of programs. Moreover, these new interdisciplinary courses are not accredited by the ALA. A list of such MS programs is given in Table-2.

Interestingly, the MS in "Biological Informatics" course of the GSLIS is meant for "Bioinformatics" which is considered

broadly as the management of biological information of all types.

The "Information Management" program of Syracuse University is interdisciplinary in its

approach as it combines expertise in the strategic management of information resources, organizational psychology, information economics, telecommunications

SI No	Name of the School	Course Name	Credits of Core and Secondary Core
1	The University of Illinois Graduate School of Library and Information Science (GSLIS)	MS in Biological Informatics	36 hours of core course
2	University of North Carolina-Chapel Hill; School of Information and Library Science (SILS)	MS in Information Science	24 hours Core
3	The School of Information Studies at Syracuse University	MS in Information Management	Core Courses (10 credits) Secondary Core (15 credits across three areas)

policy, e-business, IT, as well as data management and retrieval.

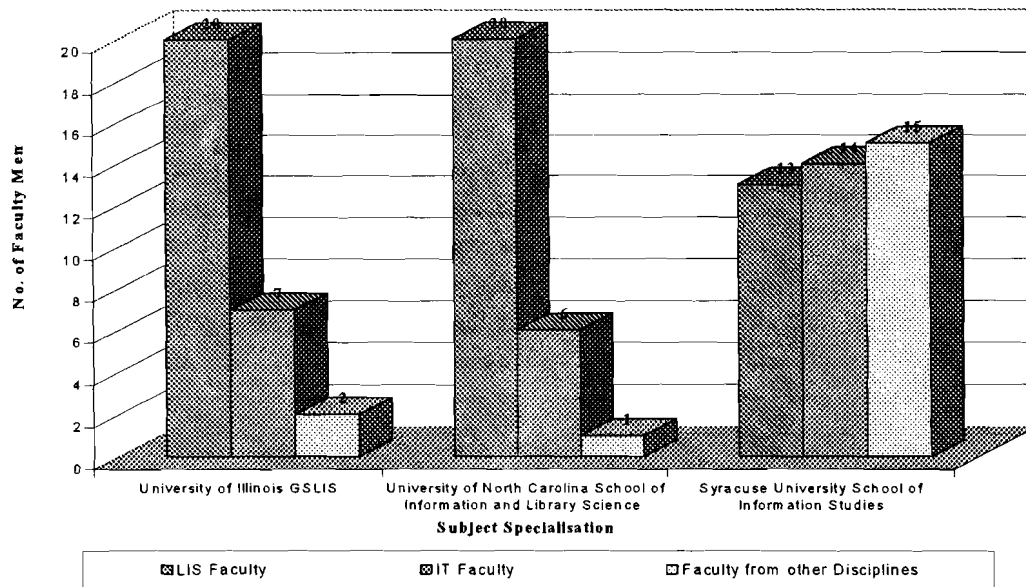
- Analysis of the Curriculum Vitae of the faculty members shows that there are 98 (Ninety-eight) faculty members for teaching MS courses. The subject specialisation of the faculty members may be grouped into three broad headings like LIS; IT which includes computer science and telecommunication and networking; and other disciplines (OD) which includes psychology, economics, management etc. Number of faculties and their respec-

ective subject specialisation is described in Table-3.

- Only the School of Information Studies at Syracuse University has faculties with an evenly distributed subject specialisation as shown in Chart-1.
- The study of the specialisation of the faculty members and their respective teaching hours as allotted in the course curriculum shows that the discipline LIS is scoring the central position for all the curriculums which is followed by the IT. The GSLIS puts more emphasis on LIS

SI No	Name of the iSchool	No. of LIS Faculty	No. of IT Faculty	No. of Faculty from OD
1	The University of Illinois Graduate School of Library and Information Science (GSLIS)	20	7	2
2	University of North Carolina-Chapel Hill; School of Information and Library Science (SILS)	20	6	1
3	The School of Information Studies at Syracuse University	13	14	15

Subject Distribution of Faculty Members in Ameriac's Top 3 iSchools



which accounts more than sixty-nine percent of the course curriculum whereas in the SILS it is fifty percent and in Syracuse University School of information studies it is more than forty-seven percent. The result is described in Table-4.

**7.0 Conclusion**

The basic purpose of this study has been focused to identify the centrality of course curriculum and faculties associated with iSchools. The analysis shows that the core of these programmes is the LIS. The share of LIS course contents in designing the curriculum of iSchools ranges from 47% (at Syracuse University) to 69% (at GSLIS).

Sl. No.	iSchool	Subject Share of LIS (%)	Subject Share of IT (%)	Share of Other Disciplines (%)
1	The University of Illinois Graduate School of Library and Information Science (GSLIS)	69.38	20.4	10.2
2	University of North Carolina-Chapel Hill; School of Information and Library Science (SILS)	50	21.42	28.57
3	The School of Information Studies at Syracuse University	47.61	23.8	28.57

Such results reveal that fundamentally there is no novelty in the course contents and nature of faculty engaged for iSchools. Therefore, the emergence of iSchools seems a smart marketing strategy to sell old products with new name induced by emerging IT applications oriented academic environment

The application of IT contents in iSchool curriculum is stable among all the studied schools and its range is 20% in GSLIS, 21% in SLIS and 23% in Syracuse University. This evidence further strengthens the fact that contemporary LIS education has significant impact of IT applications. Otherwise too, LIS education is supposed to prepare information professionals to manage and deliver information to target population. Basically, it is a service providing discipline and in general service providing sectors are highly prone to change as per emerging technologies or practice such as IT applications. IT has put speed in delivery of information and eased its storage and management.

Induction of subjects' contents like psychology, economics, management, political science, community informatics etc with an average share of ~ 20% into the iSchool course curriculum is definitely the beginning to deal with interdisciplinary approach. Although in LIS course curriculum also the applications of all these subjects are being taught as "library and society". However, to meet the emerging social needs, to maintain course curriculums relevant and to prepare contemporary professionals for delivering the goods for the society, the renaming of traditional

courses may infuse new energy and outlook among the professionals.

The iSchools are yet to firm up their unknown future and engage effective elements to promote and facilitate the changes in addressing the revolutions occurring in the information world. The interdisciplinary nature of the emerging information field (iField) requires additional formats to map and manage the numerous interrelated areas that are becoming the focus of its studies<sup>3</sup>.

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