# LIBRARY AND INFORMATION RESOURCE MANAGEMENT

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**Library and Information Resource Management**

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Dedicated to

# Contents

# Unit I: Library and Information Society

## Library – Meaning

The idea conveyed by the word library is that of a collection of books housed in building or part of building. A bookshop would also answer this description, but it is not a library. However, this does not represent a complete or correct picture of a library. In earlier period, the library is regarded as a storehouse of books and the librarian as a custodian of books. But in modern time, the libraries have become social agencies and it is considered as service institute. The book collection in a library has to organised and properly arranged on shelves and made accessible for use. A library can thus be defined as a collection of books so organised and arranged in a systematic way as to facilitate their easy use by readers.

## Definition

The word has been derived from the latin's word *Libraria. Libraria* is the name of the place where books are kept. So library is a place where books are kept for use rather than preserve. This word has taken centuries to become central point of all social actions and has got recognition as a social institution.

According to Dr. S.R. Ranganathan (1940) a library is "a public institution or establishment charged with the care of a collection of books, the duty of making them accessible to those who require the use of them and every person in its neighbourhood into a habitual library goer and reader of books."

*ALA Glossary of Library and Information Science* has defined library as "collection of materials organized to provide physical, bibliographical, and intellectual access to a target group with a staff that is trained to provide services and programs related to the information needs of the target groups."

Types of Libraries: their functions and objectives

There are different types of libraries depending on the nature of the users (clintele) served. They are:

Public libraries,

Academic libraries; and

Special libraries.

In addition there are also national libraries. Each one of these has its own distinctive role in the promotion of overall library objectives.

Public Libraries

A public library is one that serves the entire population of a community. Everyone in the community, regardless of nationality, race, colour, creed, age, sex, status, educational attainments, language or any other considerations has a claim to its services as a matter of right. It is generally established and maintained out of public funds under the mandate of legislation. United Nation

Educational Scientific and Cultural Organisations (UNESCO) and IFLA (International Federation of Library Associations) have mentioned that "Public libraries are those libraries which serve the population of a community or region free of charge or for a nominal fee."

According to Dr.S.R.Ranganathan Public Library is "a public institution or establishment charged with the care of collection of books and the duty of making them accessible to those who require the use of them."

This definition describes two functions of a library library:

- the care of a collection of books means protection and preservation of collection.

- to make them accessible in real sense so that the right person can get right information at the right time.

Public library has been defined differently by different experts depending upon the importance they gave to its objectives. It was a People's University for those who laid stress on educative aspect; it was a common man's cultural centre for those who had in mind its recreational role; for some it was a centre to provide authentic information for various aspects of life.

The most widely accepted definition of a public library was formulated by UNESCO in 1949, which was revised in 1972 and again revised in 1994, and is known as the UNESCO Public Library Manifesto.

The UNESCO Manifesto(1972) defines a Public Library as a Library, which is established under "the clear mandate of Law"; which is maintained wholly from "public fund"; which levies no "direct charge"(fees) from its users for and of its services ; and which is open for free and equal use by all members of the community regardless of race, colour, region, sex, nationality, language, status or levels of educational attainments.

Objectives of Public Libraries

The objectives of a public library are associated with its parent body i.e.community and its duty is to cater to the information and recreational needs of its users i.e. community members. The main objectives of the public libraries are:

1. To provide up-to-date and authentic information on all subjects;

2. To provide services free of cost or at nominal rates to each member of the society without any discrimination;

3. To provide a harmless and elevating use of leisure;

4. To be responsible for preservation and development of cultural and antiquarian heritage of the community.

The UNESCO manifesto is a concise and yet comprehensive statement of the modern concept, objectives and functions of the public library and of the general principles governing its service. The manifesto has envisaged four major functions for the public library viz.

a. promoting eduction;

b. fostering of culture;

c. disseminating information and

d. providing recreation.

Functions of Public Libraries

The public library performs different functions in the society to achieve its objectives and works as follows

a. Public Library as an Educational Centre
b. Public Library as a Cultural Centre
c. Public Library as an Information Centre
d. Public Library as a Recreational Centre
e. Public Library as a Reading centre for Children
f. Public library as service centre for Handicapped
g. Public Library as centre for Social Change
h. Representative of Democracy

## Academic Libraries

A library attached to an academic institution like a school, a college or a university is called an academic library. An academic library has been defined as "a library which is associated or attached with any educational institution to support its educational programmes".

Academic library is an integral part of formal education system which provides time bound education from primary school level to university level. An academic library works as a base for teaching, learning, research etc. Its major aim is to promote the objectives of its parent institution. A school library is an agency for the realisation of the objectives of school education and a university or college library seeks to promote the objectives of higher education.

Academic libraries can be categorised into three as follows:

1. School Libraries
2. College Libraries
3. University Libraries

### School Libraries

A library associated or connected with a school and used by the students,teachers and staff of that school is called a School Library. For example Central School Library, SS School Library etc.

### Objectives of School Libraries

1. To supports all educational programmes of the school;
2. To cultivates reading habits among the school children;
3. To develops their interest to use the library for their all round development;
4. To inculcates the habit of seeking help of additional sources other than text books;
5. To develops self-learning skils of students;
6. To nurtures good moral values and principles in the children;
7. To cultivates a feeling of respect and love for nation and its culture in the students;
8. To helps teachers to improve their teaching expertise;
9. To provides healthy material for recreational and entertainment purpose to students, teachers and staff members;
10. To keeps the teachers and management informed with the latest developments in the education sector.

### Functions of School Libraries

1. To achieve the above mentioned objectives a school library has to performs the following functions-

2. It provides suitable documents and information helpful in educational programmes and extra curricular activities of the school;

3. It makes available text books and other additional reading material for all subjects as per the requirement of teachers and students;

4. It procures handy documents, illustrated picture books with bold and large fonts to create the interest of children in reading.

5. It procures latest teaching learning material in the form of books, CD, audio-visuals etc. to improve the teaching skills of teachers.

6. It keeps reference books, dictionaries, year books, directories, encyclopedias, travel books etc. so that students and teachers can get help of these other than the text books.

7. It also keeps some books on easy self learning to develop the learning skills of students.(how to learn hindi, how to learn computer)

8. It makes available biographies, autobiographies of freedom fighters and other national and international personalities to develop respect and love for nation and humanity.

9. It procures magazines, different newspapers, and other light reading material like fiction books, general knowledge books, poetry books, short animated films, documentaries etc. for healthy recreation and entertainment purpose.

10. It provides books of simple and meaningful stories of classics, panchtantra, animals and birds to give moral values and ethics to children.

11. It makes available biographies, autobiographies of freedom fighters and other national and international personalities to develop respect and love for nation and humanity.

12. It also procures bulletins, journals etc. on different subjects and various aspects of education to keep the teachers and school management updated in their respective areas.

Thus the function of the school library is to help the students in the process of their self-discovery, to adopt high ideals in life, to improve the scholastic efficiency through self-study and to develop the capacity for critical thinking.

The school library should be adequately equipped with books and efficiently organised for its role. It should be so located as to catch the eye of the students. The furnitures should be functional and comfortable. The whole atmosphere of the library should be attractive and inviting so that students will feel encouraged to frequent it. It should be manned by personnel who understand the psychology of students and have an insight into the goals of school education and the role of the library in helping the school in attaining these goals.

There should be close liasion between the teachers and the library personnel. Needless to say that teachers should visit and use the library themselves and encourage the students to do. In fact the major responsibility to get the the library well used by the students periodically to the library and introduce them to the books which have a bearing on the subjects they teach. This inturn arouse the curiosity and interest of the students in the books and encourage them to read books.

Services of School Libraries

In order to achieve the objectives of the school libraries, it is expected to render the following services:

1. Display the materials and informationin well organised manner;

2. Organization of story hours, book talks, book debates, essay competition, quiz etc.;

3. Library instruction and Orientation to users;

4. Readers advisory and referral service;

5. Circulation of materials;

6. Assistance in the use of library catalogue;

7. Assistance in the searching and location of materials;

8. Assistance in the use of reference books;

9. Provision of information on request;

10. Organization of Book exhibitions; and

11. Display of a list of new books arrived, jackets of new books, and newspaper clippings.

## Present position of School Libraries

The existing conditions of the shool libraries are not conducive for effective teaching and learning at all level. Although there is a provision for libraries in schools, they are non existent inmany schools as revealed by the survey conducted by the National Council for Educational Research and Training (NCERT). Even where they do exist they are not properly organised and put to use. Some of the drawbacks which are to be immediate care of the concerned are: lack of upto date collection, lack of qualified library personnel, lack of proper co-ordination between librarian and teachers, inadequacy of space, and scarcity of fund. In most libraries it is a teacher who is given responsibility of looking after the library in addition to his normal duties.

There are, however, some exceptions and they can be found in the Central Schools run by the Central Government in different part of the country and in some of the privately managed schools. Kendriya Vidyalya and Novodaya schools have effective library sysytem to supports teaching learning process.

An imaginative teacher-librarian partnership can bring about a close integration of of the library with the teaching-learning process. This helps to strngthening the base for the improvement of the standards of school education and in ensuring that the students who pass out of the schools are not only literate but also educated in the true sense of of the term.

## College Libraries

A library attached or associated with a college and used by teachers, students and staff of the college is known as college libraries. It occupies a prominent position in the college campus. It is the pulsing heart of the college.

## Objectives of College Libraries

The objectives of a college library are as follows:

1. To helps in all educational and instructional programmes of the college;

2. To develops a habit of deep and advanced studies of subjects beyond the text books of subjects, in students;

3. To encourage the students to develop the habit of self education;

4. To enhances the understanding of different subjects or disciplines among students;

5. To prepares the students as an intelligent, aware, informative and enlightened person to play the role of a responsible citizen;

6. To assists the research work and lays down the initiative base for research work in students;

7. To informs the teachers with latest up-dates in their respective subject area;

8. To provides healthy entertainment material to its users;

## Functions of College Libraries

1. To achieve its objectives a college library performs the following functions:In order to help in all educational and instructional programmes of the college it develops its collection by acquiring different documents like textbooks, audio- visuals etc. related to various courses offered by the college.

2. It also procures a good amount of more advanced books other than text books on different subjects to develop a habit of deep and advanced studies among college students.

3. It acquires reference books such as encyclopedias and other books on each and every aspect of different subjects to enhance the understanding of subjects among students on their own besides class-room teaching and text-books.

4. To prepare the students for different professions and occupations and to develop their skills it procures self-learning material, competitive exam book etc. are provided by the library.

5. It procures newspapers, weekly and monthly magazines on current events, general knowledge books etc. to make aware its users about their surroundings.

6. It subscribes useful journals, research bulletins on different subjects as per the recommendations of faculty (teachers) for research work and to keep the teachers abreast with the latest in their disciplines;

7. If some document is not available in the library it brings it on inter-library loan on demand of its users.

8. It also provides light reading material like fiction, biographies, magazines, travel book guides, audio-visuals etc. to give healthy leisure time to its users;

9. It procures general reference books such as dictionaries, directories, encyclopedias, yearbooks as well as some subject specific reference books.

10. To make library and its use more accessible and easy it makes proper classification, cataloguing, shelf arrangement, display of newarrivals and provides services like bibliographical, indexing, abstracting etc.

11. It provides orientation training to its new users to use the library and disseminate information time to time regarding new services and text books.

## Services of College Libraries

Services offered by the college libraries to cater the needs of higher education aspirants are :

1. Lending service

2. Instruction in the use of the library

3. Assistance in the location of documents or use of the library catalogue or understanding of reference books etc.

4. Readers advisory service

5. Provision of general or specific information

6. Inter library loan

7. Orientation of freshman

8. List of new additions

9. Reservation of documents

10. Reprographic service

11. Bibliographic service

University Libraries

A library attached or associated with a university and used by students, teachers, researchers, administrative staff etc. of the university as well as by the other research workers, alumni outside the university is known as university library. It is also known as the heart of university.

According to Dr. Krishan Kumar "a university library is a part of a university set up. Therefore, it exists to serve the objectives of its parent organization. Every library programme must support university's total programme. In other words, a university library should aim to advance the functions of its university. It should reflect character of the university".

He also states that the major distinction between a college library and university library that a university library lays emphasis mainly upon research. Thus we find that research is a major objective of a university library. In others words, it circulates knowledge to generate new knowledge.

Objectives of University Libraries

Major Objective of the university library is to promote the objectives of the higher education. The specific objectives are :

1. To provide facilities for all teaching, learning, educational and research programmes of the university;

2. To cater to the information needs of teachers, students, researchers associated with the university;

3. To provids facilities to its users for intellectual development which is a power of acquiring ideas through individual efforts;

4. To conserve knowledge;

5. To use knowledge for research purpose and it makes extension of knowledge;

6. To provide latest knowledge to teachers in their field for effective teaching it makes transmission of knowledge

Functions of University Libraries

By procuring comprehensive range of documents including books, manuscripts, journals, magazines, newspapers etc. on varied subjects, it conserves knowledge and ideas.

1. By processing the procured documents with the help of classification, cataloguing, proper shelf arrangements it gives easy and open access to knowledge to its users;

2. In order to organize huge collection of documents it keeps them in different sections on the basis of their categorization like text book section, reference section, journal section, theses section etc.;

3. It provides facility of inter-library loan to its users if document desired by user is not available in the library;

4. A modern university library interacts with different information networks to give easy access to e-sources/data to more users so that they could access the desired information even from their workplace.

5. It also provides entertainment and healthy leisure tousers by providing different newspapers, magazines, short story books, fiction, internet facility etc.

6. It gives the user orientation training to new enrolled users to make them feel at home and to acquaint them with the library system so that they could make maximum use of library services;

7. With the help of display of new arrivals, old book exhibitions, information bulletins about new library services etc. it keeps the users updated with the library activities;

8. It provides reference service through reference section to establish a contact between the right reader and the right document in a personal way to attract more users;

Special Libraries

In 20th century with the development of industrial, technological and scientific advances the concept of special libraries came in to existence. The growing need for specialized information for further development and research came to play a vital role in the expansion of special libraries.

According to American Library Association (ALA ) glossary of library and information science- *Special Library* is "a library established, supported and administered by a business firm, private corporation, association, government agency, or other special interest group or agency to meet the information needs of its members or staff in pursuing the goals of the organistion. Scope of collections and services is limited to the subject interest of the host or parent organization".

Broad field defined that "a special library is neither academic,commercial, national or public but it. intends to serve the needs of a portion of a community requiring detailed information on a limited subject field".

In other words, special library collects updated and comprehensive information on the subject concerned with the parent organization and disseminate this information promptly to the people associated with the organization on demand and in anticipation.

Besides this, one other factor is that a special library develops its major collection:*on special subject or field, of special kind of documents,* and *for some special user groups.* For examples, ISRO Library, Library of Supreme Court of India, National Library of the Blind. Etc.

Objectives of the Special Libraries

The main objectives of a special library are as follows:

1. It serves the information needs of its parent body;

2. It disseminates updated and significant information in the concerned field;

3. It gives pinpointed information promptly;

4. It provides desired information to its users on demand and mostly in anticipation;

5. The users also get new ideas and inspiration to initiate new projects.

Functions of Special Libraries

A special library performs primarily the following functions:

1. It selects and procures documents and other sources of relevant information;

2. It processes the procured information or documents with the help of classification, cataloguing, shelf arrangements etc. to make them easily available for the users;

3. It subscribes to a good number of journals related to its area;

4. It provides indexing and abstracting services to the users to save their time;

5. It provides reference services to the users by telephone, by post or by e-mail;

6. It gives current awareness service (CAS) regarding new arrivals and latest services to the users;

7. It provides Selective Dissemination of Information (SDI) service to the users as per their subject interest and requirement;

8. It also gives document delivery service to its readers at their doorsteps;

9. It brings out library bulletins weekly/fortnightly/monthly to keep the users up to date with latest information;

10. It gives translation services to provide the desired information to the users in their convenient language.;

11. It also provides intranet as well as internet facility to the users in order to access the library collection and catalogues at their desktops;

12. It responds to the reference queries and make retrospective search of literature as per the users' demand;

13. It compiles bibliographies, union catalogues, documentation lists, newspaper- clippings, accession lists etc. to save the time of its users;

14. It provides inter library loan (ILL) facility to the users;

15. It gives user orientation training through personal interaction with users and by library brochure and pamphlets to make the users familiar with the library collection and services.

**Services of Special Libraries**

1. **Lending service**: Lending service is an important service provided by the circulation section. Lending of documents to user is done by the lending sections.

2. **Inter Library loan**: Some of the readers especially the research scholors, may need some documents which may be available in some other library. The librarian should help the reader in this study by getting the required document for him from other library, on inter-library loan.

3. **Selective dissemination of information**: Librarians have been providing this kind of service on manual basis and computer based SDI. It provides notifications of new primary documents.

4. **Current Awareness service**: Special libraries provides CAS to keep their users informed of new and current developments, routing of current issues of periodicals is one of the most common functions of special libraries.

5. **Translation service**: Mostly researchers and scientists are anxious to study basic and primary documents for their research projects. Some times the basic documents are in such a language script from which the researcher is not familiar with the language. To make use of such documents translation services are needed.

6. **Indexing and abstracting service**: For keeping scientists and researchers informed of the current publications many libraries bring out the indexes and abstracts.

    An index provides a clue to the information in general or on a specialized subject. It contains the author, title, name of the document with the bibliographical details.

    An abstracts provides the summary of the thought content of the article, in addition to the index information. The process of preparing the indexes and abstracts are referred as indexing and abstracting services.

7. **Referral service**: The information may not be available in the library. The librarian may direct the reader to get the information from some other sources.

8. **Bibliographic instruction**: Bibliographic instruction is a systematic approach to teach the user as to how to use the library.

9. **Retrospective search**: Retrospective search is concerned with provision of answers to specific enquires requiring verification of facts or references.

10. **Replies to enquiries**: Enquiries would be received by different means (personally or by letter or phone). Replies to enquiries can be sent by different means of communications.

11. **Reprographic service**: It is also known as copying service. It is a term used to refer to photocopying as well as duplicating documents where by one or more copies of the same size or in reduced or enlarged form are produced.

    A special library is expected to procure process, store, retrieve and disseminate information, documents and data.

National Library

    A National Library keeps all documents of and about a nation under some legal provision and thus represents publications of and about the whole nation. For example: National Library of India-Kolkata; British Library-London, Library of Congress- Washington, The Russian State Library-Moscow, etc.

    The ALA Glossary of Library Terms, simply defines, the National Library As "a library maintained by a Nation".

    In India, the Delvery of Books (and Newspapers ) Act of 1954 as amended in 1956 that provide the legal mandate of depositing books to the national library. Under this law four copies of each publication are to deposited, one each in the National Library,Calcutta, the Connemara Public Library,Madras, Central Library, Bombay and the Delhi Public Library, Delhi.

Objectives of National Library

1. It procures nation's all literary output under legal provision as well the foreign literature about that nation;

2. It works as a depository house for the said heritage by preserving it;

3. It disseminates information about the stored and procured literary wealth through different publications and services;

4. It works as a national referral and bibliographic exchange centre; and

5. It coordinates with the other libraries in a country to develop a national library system.

Functions of National Library

1. It works as a national depository library for all literary work published in the country;

2. It freely collects copies of all published material in the country under legal provision or by law;

3. It also procures foreign publications about the country; and by the authors of Indian origin living abroad;

4. It compiles national bibliographies to disseminate information about literary output of the country;

5. It works as an apex body of the national library system and coordinates with other libraries in the country;

6. It develops and maintains different bibliographic data bases and works as a national bibliographic centre;

7. It also exchanges data and documents at national and international level;

8. It produces national union catalogues, current, retrospective and subject bibliographies;

9. It makes provision for practical training of library professionals ;

10. It procures and preserves manuscripts;

11. It also keeps photocopy collection of available documents for national and international library lending;

12. It provides reading, lending, consulting facilities to researchers, writers and other users;

13. It works as a national referral centre of authentic information for all literary work of the country and responds to all national and international queries from individuals as well as from private and government organisations

Laws of Library Science

The five Laws of Library Science were first formulated by Dr. S.R. Ranganathan in 1928. A detailed account of these laws and their implication were published in the form of a book in 1931. These are the fundamental laws of Library Science and form the normative principles applicable to all the library practices. According to Dr. S. R. Ranganathan, the five laws are like the Head of a State. The following are the Five Laws of Library Science:

1. Books are for use.
2. Every reader his / her book.
3. Every book its reader.
4. Save the time of the reader
5. Library is a growing organism.

According to Ranganathan's own words "One is the generalization of the concept 'Book' this has been emphasized in recent years in the term document", so Ranganathan later on in his "Documentation and its Facets" reformulated the laws as

1. Documents are for use.
2. Every reader his / her document.
3. Every document its reader.
4. Save the time of the reader.
5. Library is a growing organism.

In 2004, librarian Alireza Noruzi recommended applying Ranganathan's laws to the web in his paper, "Application of Ranganathan's Laws to the Web"

1. Web resources are for use.
2. Every user his or her web resource.
3. Every web resource its user.
4. Save the time of the user.
5. The Web is a growing organism.

These five laws permeate into all aspects of library and its process. Every area of the libraries like book selection, classification, cataloguing, services, administration, and organization are influenced by the five laws of library science.

Law 1: Books are for Use

The law emphasizes the 'use' of books and it has replaced the concept of 'books for preservation'. In the early years books were simply chained and the libraries were considered as institution for preservation. The modern concept is to maximize the use of books. The library becomes great not because of its collection or building but as a result of the use made of by its users. The implications of the first law are as follows.

a. Library Location
A library must be located in such a place that is easily reachable by the users. A public library should be in the heart of the city. An academic library should be at a distance of few minute walk from the teaching departments. Thus proper location will help to increase the use of the books.

b. Library Hours
The opening hours of the library should be decided keeping in view the need of the user. Library hours should also be convenient to the users. A library should remain open on almost all the days of a year. This will help the readers to make better use of the library.

c. Library Building and Furniture
The library building should be *well planned*. The exterior should be inviting and the interior should be attractive. Provision of comfortable furniture and functional building enable the users to spend more time in the library and hence better use of the books.

d. Book Selection
The books should be selected and acquired keeping in view the *present and potential requirement* of the user. There should also be a periodical weeding out of books.

e. Library Staff
In order to maximize the use of the library, it is essential that library staff should be qualified and efficient. Every member of the staff should perform the role of a *friend, philosopher* and *guide* to all those who come to the library to use it. The staff should believe in and follow the philosophy of service to the user.

f. Shelf Arrangement

The books should be classified, catalogued and arranged according to a helpful sequence.

g. Reference Service
The personal service will lead to greater use of library document.

The five laws of library science emphasize the need for efficient library system to cater the information needs of teacher educators and student teachers. Moreover, it must be located in a place, where it is easily accessed by the users. The varied needs of the users of teacher education libraries necessitate the collection ranging from simple text books to standard reference sources both in print as well as electronic form. Efficient classification as well as cataloguing are to carried out for easy retrieval, which leads to save the time of users. More user oriented services are to be carried out in libraries. Online and offline resources are to ensured in teacher education libraries to promote research in Education. Libraries are to be automated to make the users on self reliant in information and empowerment of teacher educators and student teachers. Public libraries are to effectively co-ordinated with education libraries to supplement information and documents.

Law 2: Every Reader his or her Book

The second law is, *every reader his / her book* (books are for all). According to the second law every reader of a library should have the books he /she want. It advocates for a mandatory provision of library services to each reader according to his / her need. It advocates the universal and democratization of library services i.e. documents are not merely for scholars but for all, including the poor, sick, blind, prisoner, neo-literates and the old. The documents should be accessible irrespective of occupational and income lines, irrespective of the normal and the abnormal, or irrespective of an adult and a child.

Implications of the second law are:

1. Proper library legislations must be passed to provide libraries to the general public.
2. To have better services for the users, the library should provide inter-library loan facilities.
3. The collection building should be in terms of the choices of the readers and not on mere size of the collection.

Law 3: Every Book its Reader

Every book in a library must find its reader. This law emphasizes the approach to the document. According to this law, every book in a library must find its reader, not a single item should be lost in the darkness of the stack. The following are the implications of the third law:

1. To provide open access system to enable the readers to find books by themselves.
2. To provide easy ways to find the books, like classification, cataloguing and arrangement.
3. To provide good books at the least cost (proper selection of books).
4. To arrange book exhibitions, lectures, display, newsletter and bulletin (extension service).

Law 4: Save the time of the Reader

The fourth law, 'Save the time of the reader' stresses the importance of time saving devices like open access, easy location and simplified issue-return system. The following methods may be taken into considerations to achieve the objectives of the fourth law:

1. Proper reference service must be made available.
2. Follow open access system.
3. Provide stack room guides (signage) for each section.
4. Provide card system instead of register at the counter.
5. Cataloguing and classification system should be simplified.
6. Provide documentation services like photocopying and translation.

7. Provide guide cards (analytical entries 'see' and 'see also').

Law 5: Library is a growing Organism

The fifth law, 'Library is a growing organism' emphasizes the importance of planning, organization and functions of the library. The main components of the library are documents, the user and the staff. A library always grows in terms of documents, the reader or the user and the staff. In course of time new books are added, readers increase and new staff is employed. Thus library grows in status and the librarian must plan everything taking into consideration the above. The following are the implications of this law.

1. Provision of expansion should be there in every aspect – book, finance, furniture and other facilities.
2. Cataloguing entries must be prepared taking into consideration the future growth.
3. As a growing organism also replaces old and worn out parts, weeding out books must be a regular feature.
4. To preserve books, procedure like rebinding, lamination, etc, must be followed.
5. The classification scheme must be comprehensive, capable of addition and expansible.

The five laws of library science are fundamental laws of library and information science and are applicable to any problem in the areas of library science, library service and library practice. Five laws are guiding norms; these are the verified principles applicable everywhere in the library world.

Implications in Teacher Education Libraries

The five laws of library science emphasize the need for efficient library system to cater the information needs of teacher educators and student teachers. Moreover, it must be located in a place, where it is easily accessed by the users. The varied needs of the users of teacher education libraries necessitate the collection ranging from simple text books to standard reference sources both in print as well as electronic form. Efficient classification as well as cataloguing are to carried out for easy retrieval, which leads to save the time of users. More user oriented services are to be carried out in libraries. Online and offline resources are to ensured in teacher education libraries to promote research in Education. Libraries are to be automated to make the users on self reliant in information and empowerment of teacher educators and student teachers. Public libraries are to effectively co-ordinated with education libraries to supplement information and documents.

Information Science as a Discipline

Library and Information Science is concerned with the body of knowledge relating to the origin, storage, retrieval, transmission and utilization of information. The term "library science" first appeared in the early 1930's, in the title of Dr. S. R. Ranganathan's "The Five Laws of Library Science" and in the title of Lee Pierce Butler's 1933 book "An Introduction to Library Science". In 1959, Information Science began to be used in USA as a general brand for documentation which is summarized as a discipline that investigates properties as well as behaviour of information, forces governing the flow of information and the means for processing information for optimal accessibility and usability. In recent years, the trend is to term the subject as "Library and Information Science (LIS)" by merging both the concepts, and it is the study of issues related to libraries and the information science. This includes academic studies regarding how library resources are used and how people interact with library systems. These studies also tend to be specific to certain libraries at certain times. The organization of knowledge for efficient retrieval of relevant information is also a major research goal of LIS.

According to Borko, Information Science is an interdisciplinary science that investigates the properties and behavior of information, the forces that govern the flow and use of information and the technique, both manual and mechanical, of processing information for optimal storage, retrieval

and dissemination. He further stated that information science has both pure science components which enquire into the subject without regard to its application and applied science components which develop services and products. Librarianship and documentation are also the applied aspect of information science.

According to J. H. Shera, Librarianship is the generic term and information science is an area of research which draws its substance, method and techniques from a variety of disciplines to achieve and understand the properties, behaviour and flow of information. Information science contributes to the theoretical and intellectual base for the librarians operation.

According to C. G. Viswanathan, Information science is concerned with the principles and techniques governing the transfer and communication of organized thought (knowledge) from one human to another and ultimately to society.

According to P. B. Mangla, Information science is a discipline which is concerned with the study of the properties and behaviour of information as well as the forces influencing the flow of information.

According to P. H. William both library science and information science are swiftly developing subjects and so the relation between them is in a constant stage of change. However, there are many thinkers who see the library science and information science as overlapping discipline.

The Library and Information Science is at the cross road of science seeking a basic principle which would bring together the knowledge in a general framework in which each discipline would have its own place and in which its relationship with other discipline would be clearly perceived. The activities and programmes in LIS often overlap with the activities of computer science, various social sciences, statistics, and system analysis.

Many practicing librarians do not contribute to LIS scholarship but focus on daily operations of their own library systems. Other practicing librarians, particularly in academic libraries, do perform original scholarly LIS research and contribute to the academic end of the field. On this basis, it has sometimes been proposed that LIS is distinct from librarianship, in a way analogous to the difference between medicine and doctoring. In this view, librarianship, the application of library science, would comprise the practical services rendered by librarians in their day-to-day attempts to meet the needs of library patrons. Some other scholars are of the view that the two terms do not make any distinction and can be treated as synonyms.

Relationship with other Subject field

Library and Information Science is an interdisciplinary body of knowledge, taking shape in the form of new paradigmatic science recognizable from its theoretical foundations and broad agreement as to its purpose and methods and the approach it employs. This interdisciplinary subject has derived and drawn the benefits from most of the traditional subjects which include Chemistry, Computer Science, Education, Linguistics, Logic, Mathematics, Physics, Psychology and so on.

**Chemistry:** Chemistry is the science of matter. It deals with the composition of substances and their properties and reactions upon one another. Chemistry helps the Library and Information Science in the preservation and conservation of different types of documents. It is extensively used to save the print and / or digital counterparts from different biological agents.

**Computer Science:** Computer science is the study of computation. It is the discipline that is concerned with the methods and techniques related to data processing performed by automatic means. Library and Information Science often needs to handle very large quantity of data which always demands the use of computer. In recent times, the work of every branch of Library and Information Science relies directly or indirectly on the use of computer i.e. it is used for library administration, acquisition, retrospective searching, current awareness, SDI services, online

database searching, machine translation, etc. It helps to reduce the burden of handling the ever-increasing amount of information. It helps to automate the whole house keeping operation and so on.

**Economics:** Economics is the branch of social science that deals with the production, distribution and consumption of goods and services and their management. It includes interest rates, gross national product, inflation, unemployment, inventories, as tools to predict the direction of the economy, etc. Library is a non profit making institution. So, its service must be justified in terms of demand and uses. Economic theories are used for the evaluation of different types of reference sources. It is extensively used to study the document procuring and processing cost of the staff, cost of storage, cost of maintenance, cost of retrieval of information, overhead cost etc. It is also used for the cost benefit and cost effectiveness studies in the context of different services.

**Education:** Education encompasses teaching and learning specific skills, and also something less tangible but more profound: the imparting of knowledge, good judgment and wisdom. It also imparts culture from generation to generation. The libraries and information centre also serves as institutions of informal education. It teaches the library patron about how to use the library material through user education programme, gives assistance through reference services, and provides information service when the users need it. In addition, the subject education, works out programmes of education and training for the profession itself regarding the design and execution of courses, method of evaluation, certification, etc.

**Law:** Law is the combination of those rules and principles of conduct promulgated by legislative authority. In library environment there are also laws governing registration of newspaper and periodical, ISBN / ISSN number, censorship, copyright, delivery of books act, transmission & communication of information, etc. Within the premises of library itself, library rules are in existence for the proper use of library material.

**Linguistics:** Linguistics is the scientific study of human language. In the library environment linguistics is of great significance in information processing, indexing and abstracting of document, automatic indexing, artificial intelligence, machine translation etc. In the process of indexing, the indexer has to choose the terms from natural language by taking into consideration different syntactic and semantic problems as the phrase or word chosen should match the vocabulary of the text and the search terms of the user.

**Logic:** Logic is the branch of philosophy that deals with the formal properties of arguments and the philosophical problems associated with them. It means gathering and reasoning; investigating the principles governing correct or reliable inference and deals with the canons and criteria of validity in thought and demonstration. In Library and Information Science, it is used in the classification and indexing of document, and widely used in decision making by the librarian.

**Management** : Management science helps in system analysis, system design, and system management and by this way helps in managing a LIS centre most efficiently. It is responsible for deciding the line of authority and the objectives of the institution, analysing and describing a job and fixing policies for recruitment and so on.

**Mathematics:** Mathematics is the science dealing with quantity, form, measurement and arrangement, and in particular, with the methods for discovering by concepts and by models the properties and interrelationship of quantities and magnitudes. The mathematics helps in programming as well as in the study of economics of information, estimate cost, performance evaluation, etc. Various information models are needed in preparing different types of library software packages. Again, bibliometrics is a branch of Library and Information Science where mathematical principles are used to a great extent.

**Psychology:** Library and Information Centers have to provide information service based on user needs. But the users have different psychological temperaments, which makes knowledge of human psychology important in LIS. The human psychology helps the Library and Information Science professional to understand the user correctly, analyze his/her problem or need precisely to provide the specific information in a form most suitable to him/her, and to treat the user appropriately. The knowledge of psychology is also important in designing and developing an information retrieval system as it helps to select a term which majority of the users is likely to use.

**Statistics:** Statistics is concerned with the collections, classification, analysis and interpretation of numerical facts or data. Statistics obtains data from a study of a large quantity of numerical data which need not be exact but should approximate the true value. Statistical methods in Library and Information Science help in improving the existing services of the library. The statistical analysis is used to assess the users' needs and ascertain views on library services, to measure productivity of library staff, to justify the need of reference service, cost benefit analysis, library performance evaluation and so on.

Library and Information Science and other traditional subjects are inter-linked. It is sure that information science is benefited by other traditional subject. But in return it also gives its best to other subject.

INFORMATION SOURCES

Meaning and Definition of Information Sources

An information system generally refers to the interrelated process of gathering, organising, storing, retrieving and disseminating information items. The term 'Information sources' has two connotations. One is that of the stores or locations in which information kept. Therefore, a sources information may be an object, a place, an organisation or a particular person, for example, an encyclopaedia, a database, a warehouse, a library, a telephone number, or an expert. Sources may be personal or impersonal, public or private, passive or interactive, stored locally or remotely, to which immediate or delayed access may be possible. In the second connotation, information sources are virtually indistinguishable form of information channels because the latter may be written such as a book, or words in some other printed or processed format, or verbal sounds, such as a telephone, or data line.

The sources wherefrom we get information are information sources. These sources comprise documents, institutions and organisations, and human beings. For example, for finding out the meaning of a word, we consult a dictionary; for admission in a particular course of study, students contact an institution; and for fixing the date of a marriage, people consult a priest. The term 'information sources' pertain to library and information science. Mostly librarians and information scientists deal with information sources.

Confusion between information sources and information channels may be regarded merely as a replay of old arguments about form versus context. Thus, `information resources' are defined as having "two components: conduit, i.e., the physical facilities used for gathering, storing, processing and distributing information; and content, i.e., information sources and elements".

Information Resources: This particular term pertains to information and communication technologies especially to information management. Sometimes information management is referred to as 'information resources management'. Schneyman (1985) included five types of information resources for the purpose of information management. The resources are: systems support including computers and telecommunications; processing data, images, etc.; conversion and transformation including reprographics; distribution and communication including network management and telecommunications; and finally retention, storage and retrieval which covers libraries, record centres, filing systems and internal and external databases (Feather and Sturges,1997).

Difference: The difference between the two concepts is obvious in as much as information sources are related to library and information science, and information resources to information and communication technologies. Only a small subset of information resources forms information sources.

But, there is distinction between information sources and information resources. Sources become resources when their relevance for the user has been recognised or optimised in some way and a suitable conduit has been engineered. It has been stated that information resources are information sources that have been iristitutionalised in some way arid can `thus' be reused. In other words, the idea of organisation for reuse essentially what distinguishes between the information source and the information resource. The source is in a sense the raw material and the resource the product least partially processed. As a simple example, a book on global warming in a bookshop is a

source of information. Theme same book on library shelves and with entries in the library catalogue may become a resource.

Types of Information Sources

Information sources can be categorised according to types, contents and media. Here we shall categorise them according to types first, followed by contents and media.

Information sources can be broadly divided into two types based on its types as Documentary Sources and Non-documentary sources. Documentary sources are formal sources. These sources are written or recorded information. The documentary sources can be further categorised based on content as primary sources, secondary sources and tertiary sources of information.

Non-documentary sources can further be divided into formal and informal resources of information. The formal sources include research organizations, learned and professional societies, government departments, and academic institutions.

The informal sources may include discussion or conversation with experts attending professional meetings and conferences etc.

**Documentary Sources**

The documentary sources can be further categorised as primary sources, secondary sources and tertiary sources of information.

a.  Primary Sources

Primary sources of information are more current and up-to-date than any other sources of information. Primary sources consist of new knowledge or new interpretation of old knowledge. Primary sources are the first published records of original research and development activities. The research findings by the researchers are recorded and published first in the primary sources such as journals. These sources are very useful for the researcher to keep them up-to-date about latest developments in their areas of research. Primary sources consist of original theories, ideas, discoveries and inventions. The information available in the primary sources is original in the sense that this information is neither filtered nor condensed. These primary sources contain new or original ideas or new interpretation of known facts. Examples of primary sources:

1.  Government documents
2.  Patents
3.  Standards
4.  Journal Articles
5.  Autobiographies, diaries and memoirs
6.  Speeches
7.  Technical Reports
8.  Web/Internet –website that publishes the author's finding or research.
9.  Survey Research

10. Proceedings of meetings, conferences, symposia
11. Dissertations/Thesis
12. Historical Documents
13. Work of Art, Music, architecture, literature
14. Newspaper articles
15. Trade Literature
16. Unpublished documents – these are the primary sources of information which remain unpublished. Ex.: laboratory notebooks, memoranda, diaries, letters to or from a particular individual, internal research reports, files.

b. Secondary Sources

Secondary sources are the sources which are compiled from the primary sources. They analyse, interpret and discuss information about primary sources. Information is not original, but it is analysed or interpreted. Secondary sources do not carry new and original information but guide the users to primary sources of information. They organise the primary sources in a convenient form. Information in secondary sources is usually modified, selected or reorganised in such a way that they are easy to consult. Secondary sources help the user to locate the primary information. Examples of secondary sources:

1. Reference books such as encyclopaedias, dictionaries etc.
2. Textbooks
3. Guide to Literature
4. Abstracting Journals
5. Indexes
6. Review of Literature
7. Monographs
8. Bibliographies
9. CD-ROM

c. Tertiary Sources

Tertiary sources of information contain information distilled and collected from primary and secondary sources. The main function of tertiary sources of information is to help the readers in the use of primary and secondary sources. Examples of Tertiary sources are:

1. Directories
2. Almanacs
3. Year Books
4. Bibliography of Bibliographies
5. Union Catalogue

**Types of reference Sources**

**a. Dictionaries:**

The word 'dictionary' comes from the Latin word "Dictonarium" originating from the terms "dictio" means a word. Any book, which explains the meaning of a word/words of a particular language or languages arranged alphabetically id dictionary.

The Encyclopedia Britannica defines dictionary as "a language with their meanings in the same or another languages, usually in alphabetical order, often with data regarding pronunciation, origin and usage"

**Uses of Dictionaries**

1. To find the meanings of words and terms.

2. To check the pronunciation and verify spellings.

3. To trace the origin, derivation and history of a word.

4. To indicate the dialect and correct usage of a word

5. To determine abbreviations, signs, symbols, synonymous, homonyms etc.

**Types of Dictionaries**

**1. General dictionaries**

These are just like general encyclopedias where subject coverage is not limited to a particular field rather it contains the word meanings and their uses for the general readers.

Eg:   i) Webster's Third new International Dictionary of the English language.

        ii) Oxford English Dictionary

**2. Subject dictionaries**

Dictionaries dealing with the terms of a particular subject are known as subject dictionaries. They include highly technical terms of a specific subject which are not usually recorded in general dictionaries. Eg: i) Dictionary of Education

On the basis of number of languages covered such dictionaries can be categorized as

a) Monolingual: It consists of only one language. Ex: Oxford English Dictionary

b) Bilingual: It consists of two languages; Ex: Lifco Tamil English dictionary

c) Multi lingual: It consists of more than three languages. Ex: Tamil English Hindi Dictionary

**b. Encyclopedia**

The word encyclopedia has its origin in two Greek words 'enkyklos' and 'paideia' which means 'circle' and 'knowledge' respectively. The Oxford English Dictionary defines encyclopedia as "a literary work containing extensive information all branches of knowledge, usually arranged in an alphabetical order".

ALA glossary defines it as "A work containing informational articles on subjects in every field of knowledge usually arranged in alphabetical order or a similar work limited to a special field or subject"

Usefulness of Encyclopedia

Encyclopedia is a store house of knowledge and provides information on all subjects.

1. Most used sources for introductory or background information.

2. Most comprehensive coverage

3. bibliographical information led to further study

4. Facts and illustrations helps a lot

5. Gives idea of a particular period

**Types of encyclopedia**

General Encyclopedia: General encyclopedia is a work containing informational articles giving essential general information on subjects in various branches of knowledge which is arranged alphabetically by subject and names. Eg: New Encyclopedia Britannica,   Encyclopedia Americana

Specialized Encyclopedia: Specialized encyclopedia is a work containing informational articles giving essential general information limited to a specific field of knowledge or area of interest arranged alphabetically by subject and names. Eg: McGraw-Hill Encyclopedia of Science and Technology-15 vol.,  Encyclopaedia of Library and Information science-35 vol

### b.    Biographical sources

It contains the short biosketch of very specific persons of reputed fields. It lists of the great persons like date of birth, education, practical life, writings, experience, achievements, marital status, post held, address, expiry date and contribution to the society etc.

Eg:       Who's Who-India, International Who's who

The term biography has been derived from two Greek words 'bios' meaning 'life' and 'graphine' meaning to write. The term biography is defined as written life of a person. It is a ready reference source. Oxford English Dictionary defined as "the history of the lives of individual men".

### Types of Biographical Sources

Biographical sources are derived in to

1.  Current biographical sources
2.  Retrospective biographical sources

### A. Current Biographical sources:

Biographical dictionaries which provide current biographical information required by the users are the current biographical sources.

These sources may be categorized into general sources and specialized subject sources at universal as well as national levels.

### a) University General Biographical Sources

E.g. i)  Dictionary of I.N. Biography

ii) International who's who

### b) Universal Specialized/subject biographical sources

i)  World military leaders, New York

ii) I.N Authors and writers, New York

### c) National Biographical Sources

i) India who's who, New Delhi

ii) Reference India, New Delhi

### d) National specialized/ subject biographical sources

i) Artists Directory, New Delhi

ii) Lok Sabha who's who New Delhi

### B) Retrospective Biographical Sources

Those biographical dictionaries which provide retrospective biographical information required by the users are the retrospective biographical sources. These sources may also be categorized in to general sources and specialized/ subjects sources at I.N as well as national levels.

a) **Universal General biographical Sources**

    i) Cambridge Biographical Dictionary

    ii) Webster's New Biographical dictionary

b) **Universal specialized /subject sources**

    i) Biographical Dictionary of Scientists

    ii) Dictionary of Scientific Biography

c) **National general biographical sources**

    i) Dictionary of National biography, Calcutta

    ii) National biography dictionary of India

d) **National specialized/ subject sources**

    i) Who's who of Indian writers

## IV. Geographical sources

The geographical sources are category of reference books that help in answering queries related to places. They provide information like description and location related to countries, states, regions, districts, cities, mountains, rivers, lakes and all places throughout the world. Geographical sources consist primarily of graphic representation.

**Types of Geographical Sources**

1. Maps, atlas and globes
2. Gazetteers
3. Travel guide

**a. Maps, Atlas and Globes**:

These are the main sources of geographical information. A map represents certain boundaries of the earth on a flat surface. "A map is a flat pictorial representation usually of the earth's surface or a section of it"

Eg: Maps of Mughal India

Atlas is the collection of maps usually bound together in one volume. Atlases are the excellent sources of cartographic information. It has a collection of small or larger maps and they are arranged in a systematic order to facilitate easy consultation with on exhaustive index.

Eg: The times atlas of the world

Globe is the only relatively accurate representation of the earth. It helps to understand the real dimension of the earth.

1. **Gazetteers:**

The gazetteer is basically a listing of places with sufficient information to identify their location. It is a geographic dictionary which alphabetically lists places and physical features' providing information. As a reference source a gazetteers provides historical, social, cultural,

political, industrial, demographic and administrative details about a place in a country or a whole country. Eg: Imperial Gazetteer of India

2. **Travel guide**:

Travel guides give information about specific places. Travel guides cover the information of social, historical and economic aspects.  These are used frequently for detailed information about the specific places, historical sites etc. These include information's about routes and travel facilities also such as information's about climate of the places, rail, roads, highways, hotels to stay and train and air ways etc. Eg: Hill Resorts of India.

**V. Bibliography**

Bibliography derives from the Greek word 'Biblios' meaning book and 'Grapho' meaning to write. The oxford English Dictionary defines as "a list of books of a particular author country or those dealing with a particular theme".  Bibliography is used to understand and history of books, the status of individual works etc.

Eg: Indian national bibliography; Cumulative Book index

**Need of bibliography**

1. The detailed information about a document can be ascertained with the help of bibliography.

2. Bibliography contains full details like name of authors, joint authors, edition, name of publisher, place, year of publication, price etc.

3. Bibliography is needed to verify the book selection materials too.

4. It gives the details of all the books/ writing of an author.

5. Bibliography helps to locate of availability of a book or literature published.

6. They promote the use of books and other materials.

7. They serve as a key or guide to the literature of the subject.

**Kinds of bibliographies**

**1.    Analytical bibliography**:

An analytical bibliography deals with the study and detailed description of documents. It examines the physical characteristics of documents, the history of the documents as physical entities.

**2.    Systematic bibliography**:

When the records are listed in any order-alphabetically, logically, or according to some principle or in a systematic order they are referred to as a systematic bibliography.

Systematic bibliography is further sub-divided as under

i)    **Universal bibliography**: It lists all documents of all kinds of materials, produced in all countries in every language at any time and all themes.

Eg: Bibliotheca universal

ii)    **National bibliography**: The national bibliographies are serial publications which are current and attempt to list the publications of a particular country.

Eg:    Indian National Bibliography, Calcutta

British national Bibliography, London

iii)    **Trade bibliography**: It is a list of books and other materiel's which are printed and available in a country for sale, through publishers, book-sellers or trade agencies.

Eg :    Indian Books in print, Delhi; Books in print, New York

iv)    **Subject bibliographies**:

It is a comprehensive list of all books, periodical articles, pamphlets and other reading materiel in a particular subject. Ex) Library Literature

v)    **Author bibliography**:

This records books, articles etc written by an author or attributed to him and the materiel written about the author by others.

vi)    **Bibliography of bibliographies**:

Such bibliography is a list of bibliographies recorded in a systematic and logical order. It consists of all types of bibliographies on different subject fields published separately.

2.    **Historical bibliography**:

This branch of bibliography deals with the history of making books. It covers the history of writing, printing materials and binding etc.

**VI. Year book**

Year book provide recent and update information on subjects or personalities. Year book are the reference books that describe the events relating to a particular year. They are the alphabetically organized treatment of the people, places and development of significance during a year. They are issued annually for the purpose of providing current information in narrative, statistical or directory form.

ALA defines a year book is "an annual volume of current information in descriptive and /or statistical forms some times limited to a special field". The emphasize current information rather than the information relating to the past.

**Types of yearbooks**

1.    International

2.    National

3.    Organizational

4.    Subject based

a. **International Yearbook**:

These yearbooks include the facts and figures pertaining to world. Such yearbooks contain the organizations of International level. Eg: Statesmen's yearbook

b. **National yearbook**:

A year book of national level gives the details of the states of that country and generally includes area population, government, constitutions, national flag, national bird, national song, national animal etc. Eg: India: a reference annual

c. **Organizational year book**:

Such yearbooks are published by an organization which contains the activities, various decisions, plans and proposals, membership etc. Eg: A yearbook of commonwealth

d. **Subject based yearbook**:  These yearbooks contain the information pertaining to a particular subject. Eg:  Year book of higher education;  Year book of human rights

**VII. Almanacs**

It is the calendar of the astronomical information about stars, moons and sun. An almanac is a publication usually an annual, containing a variety of useful facts of a miscellaneous nature and statistical information.

It was originally a projection of the coming year by days, months and holidays covering miscellaneous matters such as astronomical events, planetary tables, astrological predictions etc.

**Types**

a. **Astronomical almanacs**: It contains information about astronomy, future etc.

b. **Informative almanacs**:  They usually contain general type of information. E.g: Whitaker's almanac

c. **Topical almanacs**: In these information is given on a specific subject or topic. E.g: The almanacs of American politics

**VIII. Directories**

Directories are basically list of companies academic and research institutions, government agencies products and services arranged in some systematic order for easy reference.

ALA glossary says a directory is "a list of persons or organization systematically arranged usually in alphabetic or classed order giving addresses, affiliation etc for individuals and addresses officers, functions and similar data for organizations."

**Types of directories**

a. **Trade or business or industrial directories**

A trade directory contains secondary data like the products and services. These directories are called as "buyers guide". Business directories provide mass of business and commercial data. The following pieces of information are available in this directory. Companies' capital share details, profit and loss account, stock exchange commodity markets and so on. Next category is the industrial directories. Industrial information is available in trade literature and trade directories.

**b. Directories of scientific organization**

This directories guide to the government departments learned societies, universities and research laboratories. It can act as a research guide. They list the research activities conducted at the organizations.

**C. Professional directories**:

They list the professional organizations and their members such as those relating to law medicine, engineering and so on. The basic data relating to the organization, association, name, address, phone number, membership, publication etc are presented in these directories which enable the particular class of users who are interested to know professional associations.

d. **Institutional directories**:

They guide the users to the institution like hospitals, museum, universities, and school libraries and so on.  The basic data about these institutions are given in this directory.

e. **Government directories**:

The ministries departments and other organs of the government issue various directories which contain the activities and achievements of the government bodies. The government directories are issued at various levels, national, regional and local.

## IX. Hand books and Manuals

A Hand book is a compilation of miscellaneous information in a compact and handy form. It may contain data procedures, principles etc. Tables, graphs, diagrams and illustrations are provided. Scientists and technologists use hand books in their field rather frequently. Manual is an instruction book, which provides instructions as how to perform a job or how to do something by means of specific and clear directions. E.g.: Engineering Mathematics Handbooks; Hand book of chemistry

## Non-Documentary Sources

There are other sources of information besides the traditional documentary sources, known as non-documentary sources, which provide the information immediately required by any user.

Non documentary sources are those which are non-print media, but provide immediate required information to the users. There are two kinds of non-documentary sources. They are : Formal and Informal

The formal sources include universities, consultants, industries, research institutions and government departments.

The informal sources comprise of conversation with colleagues, visitors, participation in conferences, seminar etc.

In a simple form we can group non-documentary sources of information in to the following four categories.

**Human resources**:

If a man who is engaged in doing historical research, the best way to get information is to go to the particular place and talk to the oldest person of that area. In addition to it, interaction with experts, fellows, specialists, family members gives a lot of information to solve problems of researchers.

**Institutional source**:

Sometimes the information is not published in regular publication, so this can be sought directly from the research organizations. This is the case of institutional sources of information. In this type of information sources the role of specializes information centers, college universities etc can be seen as the examples of institution sources of information.

**Mass media**:

Mass media is a means of communications of information through broadcasting and telecasting. The technology in this field is advancing day by day. Cable television can be seen in every house of the present society, which not only provide entertainment to the public but also provide information in many new ways.

**Audio-visuals:**

Audio and visual aids to education has become substantial, so many libraries are going for them. Sound recording on tape, cassettes and audio cassette are of great help in the libraries. Both the tapes, CDs and disks have the advantage of high quality sound and vision.

The above categorization of sources of information is based on the characteristics of the documents. Categorization of documentary sources of information is useful. Primary sources are generally more accurate than secondary and tertiary.

**Electronic /Web Learning Resources**

Electronic resources are those sources which are available in electronic or digital form. A number of electronic sources are available on CD-ROMs and on the internet. These sources include e-journals, e-book, electronic databases, etc.

P.G. Barker has identified three types of documents for use in digital resources. They are: static, dynamic and living. Static documents are the most basic, contain fixed information and never change their form, for example, traditional on line data. Dynamic documents also contain fixed information but are able to change their form, for example, multimedia, CD-ROMs. Living documents are able to change both their forms and information, for example, information contained on the web.

Electronic Resources include the following media:

1. Collection in which complete contents of documents are created or converted into machine-readable form for online access.
2. Scanned images, images of photographic or printed text etc.
3. Scientific data sets.
4. Online database and CD-ROM information products particularly those with multimedia and interactive video components.
5. Computer storage devices such as optical discs, CD-ROMs/DVD-ROMS.
6. Databases are accessible through internet and other networks.
7. Digital audio, video clips or full length movie.

Advantages of Electronic Resources

The electronic or digital information sources provide a number of advantages over the traditional print-based sources. Information can be disseminated instantly to the users; the search results can be saved for future use and updated whenever required. Also, e-resources have the benefits as ease of usability, readability, affordability and accessibility. Some of the advantages of e-resources are as follows:

1. Easy and effective retrieval search.
2. Current Information.
3. Quick access through efficient search engine.
4. Teleconferencing.
5. Downloading the text, image, audio with the Multimedia concept
6. Teaching and learning process in a live manner.
7. Remote access to the resources from outside a single physical library.
8. Reduction of theft and mutilation.
9. Use of several people simultaneously.
10. Reduced cost of for binding, storage, and stack maintenance.

Disadvantages of E-resources

The following are the disadvantages of e-resources.

1. There is a need of computer or electronic devices for displaying the contents of the documents.
2. Regular supply of electric power is needed.

3. Long exposure to computer screen can cause health problems such as eye starin and backache problem.
4. E-book equipment is fragile and easily damageable.
5. Security problems as computer piracy are now prevalent.
6. Backup devices are needed for storing.

E-journals

Journals are the most effective source of primary literature and an important source for the researchers. Those journals which are published in digital form are known as digital or e-journals. Electronic journals are serial publications available in digital format such as on CD-ROMs or on-line etc. Online journals are the electronic version of the existing printed version.

Electronic journals may be defined as "any journal existing in an electronic format that embraces all periodicals available electronically as well as in paper copy, including the text of periodicals accessible through online networks and those periodicals distributed in CD-ROM form."

E-journals are often referred to interchangeably as 'electronic periodicals', 'electronic serials', and 'on-line journals'.

G. McMillan defined e-journals as any serial produced, published and distributed nationally or internationally via electronic networks such as Bit Net and Internet. E-journals are different from the online journals. The latter are the electronic counterparts of journals in the print.

"An electronic journal (e-journal as being a version of a traditional print on paper) which is disseminated electronically in some form directly to the end users." E-journals are full text journals that are accessible via internet/intranet.

Thus, electronic journal or e-journal means a journal for which the full end product is available on optical disc, over a network or in any other electronic form. Strictly, it is a journal in which all aspects of preparation, referring works, assembling and distribution are carried out electronically. The growth of the electronically parallels the growth of the web. In other words, e-journals are those journals which can be accessed electronically using different technologies such as World Wide Web (WWW), FTP, Telnet, e-mail, etc.

Features of e-journal

The main features of e-journals are:

1. Simple file structures (one file equals an article or one file equals one issue).
2. Published by individuals or groups of scholars.
3. Disseminated by e-mail and the implied audience is the individual subscriber.
4. Copyright restrictions are usually waived to the extent that proper attribution is made.
5. HTML based e-journals use the web to disseminate specially formatted issues.
6. Issues are articles include graphics, multimedia or links to other internet resources.

Advantages of e-journals

Some of the advantages of e-journals are:

1. Electronic journals allow for more speed in the scientific communication process.
2. Speedier delivery in compared to print version, search is fast and user-friendly.
3. Easy and effective search.
4. Electronic articles are not limited in size.
5. It is much easier to monitor the use of e-journals.
6. Multiple accesses.
7. It is available 24 hours and 7 days a week.

8. It demands neither library space nor shelving costs nor they can they be stolen from the library.
9. Most of the publishers of e-journals provide keywords, author search, thus reducing the role of additional indexing and abstracting.
10. Easily printing and downloading.
11. Archive and remote access.

Disadvantages of e-journals

Disadvantages of e-journals are:

1. E-journals and articles are not physically present in the library.
2. Often does not include in indexing and abstracting services.
3. Publishers change their day-to-day terms and conditions.
4. Reading from the computer monitor creates eye strain and backache.
5. Lack of archiving and back files availability.
6. It requires suitable training and technology.
7. It is available in various forms and formats.
8. It requires enough hardware and software.

Electronic Book (E-Book)

The 21$^{st}$ century has brought a number of new technological changes. These changes include the e-journals, e-book, print on demand, etc. E-books have been quickly growing in availability since 2005.

Definition of E-book

The Association of American Publishers has provided the following definitions of e-books.

"An e-book is literary work in the form of digital object consisting of one or more unique identifiers, metadata, and a monographic body of content, indented to be published and accessed electronically." E-book is digital medium for communication of information. It may be in CD-ROM form, may be available on-line with the help of Internet. It is easily available in 24x7.

According to Lee, an "e-book is a term used to describe a text analogous to book that is in digital form to be displayed on a computer." The New Concise Oxford English Dictionary defines e-book as "a book that has been converted to digital form and could be read on a computer, usually through network services or CD-ROM". E-books could expand over print media by adding specific features such as hypertext links, search and cross reference functions and multimedia and "an electronic version of a printed book which can be read on a personal computer or hand-held device designed especially for this purpose".

An e-book is usually a collection of several digital objects or documents consisting of content files, style sheets, metadata, digital rights, navigation, and other components. The contents consist of text documents and image documents. Metadata provides a summary about the book (e.g. author, publisher, ISBN, and price), while the digital rights management files specify the rights of the owner of the book.

E-books contain audio, video and dynamic hyperlinks. They can be delivered instantly from anywhere in the world by downloads, e-mail file attachment, on diskette, or CD-ROM. The contens of e-books are disseminated in digital form, which can be had with the help of personal computer or special purpose reader.

Features of e-books

Key features of e-book are:

1. Fast accessibility.
2. Cheaper.
3. Easily searchable.
4. Easy to print and copy.
5. Users can manipulate the text easily in the desired manner.
6. Online purchasing is possible.

Advantages of e-books

E-book has many advantages such as hyper linkage, cutting, pasting, printing and multiple simultaneous user access. It becomes a viable means of book publication. Some of the advantages of e-books are as follows:

1. E-books provide multimedia information, full text searching, reference linking and flexibility in searching and browsing, portability and interoperability on a variety of devices.
2. The instant delivery of material is a reality with e-books.
3. Saving in selves' space.
4. E-book are ordered on-line and delivered electronically to the computer.
5. It is compact, convenient, and portable.
6. The availability and access to titles is quicker and more convenient to the readers.
7. It can be accessed even in remote areas by more than one person.
8. No loss of pages as in the case of traditional books.
9. E-book facilitates access in digital form to previous and rare documents that are currently under lock and key in the collections around the world.

Disadvantages of e-books

The inclusion of e-books in a library collection has presented some problems related to access, ownership, and protection of rights. Some of the disadvantages are:

1. Lack of awareness of software/hardware available for e-books.
2. Not very convenient to use.
3. Difficulty in accessing computer or internet.
4. Some titles are available for downloading but costly.
5. Problems with printing and downloading.
6. There is no compatibility across different hardware/software for using tiles.

**E-Learning**

E-learning is a tool for using information technology to enable user to learn anytime and anywhere in the world. E-learning is the convergence of learning process through internet. It has brought out about profound changes in world over in the way of learning and training of users any time and any where e-learning is increasingly perceived by government and educators. India's EDUSAT is the first inclusive satellite for serving the educational sector. It is specially configured to meet the growing demand for an interactive satellite based distances educational system for the country through audio-visual medium employing Direct to Home.

**Definitions**

**The American society for Training and Development (ASTD)**

E-learning is defined as "teaching and learning delivered, enabled or mediated by electronic technology for the explicit purpose of learning".

**Lanrillard (2006)**

Lanrillard has defined "e-learning as the use of any of the new technologies or application in the service of learning or learner support".

E-learning is an interactive learning in which the learning content is available on line and provides automatic feedback to the learners learning activities.

**Need of e-learning**

1. It provides easy to use and step by step on line training designs.

2. It helps to learn from experts' right at home.

3. E-learning became proven and certified by many universities and multinational companies.

4. Self-directed and convenient

5. Online education is accessible by windows and UNIX users.

6. E-learning is cost effective and cheaper from any formal courses.

7. Users can get on-line education without moving anywhere with the help of e-learning.

8. Measures the skills of learners for their performance and award academic degrees.

**Characteristics of e-learning**

1. Individual privacy in learning.

2. Freedom of learning

3. E-business based approach to education.

4. Provides lifelong learning to the Users.

5. Provides infotainment- based learning.

**Components involved in e-learning**

1. Self-Instructional material

2. On line education

3. Virtual learning environment

4. Web resources

5. Feed back for restricting the study programes.

6. Evaluation of performance for the learners.

**Kinds of E-learning**

(1)     Online distance-learning courses

(2)     Hybrid Courses

In these courses the instructor combines elements of online distance learning courses and traditional courses. Web based activities may replace a portion of class room sessions, which is also known as blended learning.

(3)     Traditional Courses with technology elements

These Courses are traditional in that the instructor teaches all sessions in the classroom but with the occasional use of technology, such as web-based activities, multimedia simulations, virtual labs, and/or on line testing, which is known as e-enhancement.

Types of E-learning

There are fundamentally two types of learning's.  They are

(1)      Synchronous learning

(2)      Asynchronous learning

Synchronous learning

It means, at the same time, involves interaction of participants with an instructor via the web in real time. Some synchronous technologies are telephone, video conferencing, web conferencing etc.

Asynchronous learning

It means "not at the same time", allow the participant to complete the WBT at his own pace, without live interaction with the instructor.

Some Asynchronous Technologies are audio cassette, e-mail , message board forms, print materials, voice mail/fax, video cassette.

**Asynchronous Methods**

(a) Embedded learning:

❖        Embedded learning is information that is accessible on a self help basis.

❖        It can e delivered to the place of work, or to mobile learners.

Example:        EPSS- Electronic performance support system.

The Embedded learning offers learners   the information they need whenever they need it.

(b)      Self-Paced Courses

❖  It's main advantage is convenience (ie at any time)

❖  This can include just in time training where a participant gets exactly the training he or she to perform a task.

(c)      Discussion Groups

❖  A discussion group is a gathering of conversation that occurs over time.

❖  They are also called as message board bulletin boards and discussion forms.

❖  It can be used to support a group of participants taking the same class or can be used to support participants performing related tasks.

❖  A discussion group is a very competent way to supply expert answers to a large group of proper.  A single answer to a common question can help many.

Synchronous Method

Virtual Classroom

Virtual classroom duplicates the features of a real classroom online.  Participants interact with each other and instructors' online instant messaging, chat, audio and video conferencing etc.

Blended Method

Most of the educational institutions prefer to be a mix of both synchronous and asynchronous e-learning methods according to their requirement.

Advantages of E-learning

1. Very quick

2. Retainable

3. Up to date

4. Interactive and Collaborative

5. Easy to track

6. Cost effective

7. It will be allow that course to be held entirely and independently on line

8. The students may be develops their abilities through intellectual games, interactive quizzes, IQ tern and multimedia games.

9. It's tool can change the public place of class rooms to personal place of virtual classroom.

**Disadvantages of E-learning**

1. Learners access to pc and internet.

2. Setup time, finding, buying and writing course

3. Time taken to learn how to me the –e-tools

4. Coastwise expressive such as computer, internet web camera, sound corn etc.

**Subject gateways in Teacher Education**

The subject gateways have been attracting lot of interest internationally as they have been filtering relevant information and avoid hardship to the users. Librarians play a major role in building internet resources discovery services and that subject gateways are offering a means to do this.

A large number of search sites are devoted to specific disciplines and purposes. Major libraries create portals with web logs as a guide for its users. Subject gateways are portals created by librarians where links to selected useful websites are given with comments. Subject gateways are a kind of weighted index to the Web resources on a subject. It is simply a collection of websites on a particular subject. Unlike search engines (which find both good and poor quality websites randomly sorted) subject gateways contain only web resources that have been evaluated by subject specialists. Visiting subject gateways enable the user to find out relevant information without being lost in the larger proportion of misinformation.

Subject gateways are Internet–based services designed to help users locate high quality information that is available on the Internet. They are typically, a database of detailed metadata (or catalogue) records, which describe Internet resources and offer a hyperlink to the resources. Users can choose to either search the database by keyword, or to browse the resources under subject headings.

Examples of subject gateways :

List of subject gateways, www.lub.lu.se/tk/SBIGs.html

Directory of networked resources, www.niss.ac.uk/subject/index.htm

Philosophy in Cyberspace, www.personal.monash.edu.au./~dey/phil

Social Science, http://www.sogig.ac.uk

Gateway to educational materilas, http://www.thegateway.org/

The subject gateway in Teacher Education typically consists of all possible electronic resources related to teacher education. Links are provided in the subject portals to the website addresses of NCTE (National Council for Teacher Education), UGC (university Grants Commission), NCERT (National Council for Educational Research and Training), SCERT(State Council for Educational Research and Training),  databases of Dissertation Abstracts, INFLIBNET (Information Library Network), Shodaganga,  NOPIR of CSIR , DOAJ (Directory Open Access Journals), Online journals, online dictionary, etc. The subject gateway of typical Arts and Science College is provided as follows.

# INFORMATION SERVICE

## Reference Services

According to the American Library Association Glossary of Library Terms, "Reference Service is that phase of library work which is directly concerned with assistance to readers in securing information and in using the resources of the library in study and research".

Ranganathan defines Reference Service as `Personal service to each reader in helping him to find the documents answering the interest at the moment pin-pointedly, exhaustively and expeditiously.' It is also, he says, at-tempts "to provide the right book for the right reader, in the right way and at the right time, in the right personal way."

Margaret Hutchins defines `Reference Services' as those that include "the direct personal aid, within a library, to persons in search of information for whatever purpose and also various library activities specially aimed at making information as easily available as possible."

William Katz views 'Reference Service' as "the behind-the-scene activities of the reference library in the selection, acquisition and maintenance of library stock and its careful recording and administration."

## Need and Purpose of Reference Service

Most of the human activities such as education and training, research and development, socio-economic growth, industry and business, trade and commerce, politics and international relation, arts and culture, government administration, need active support of libraries. In fact, modern innovative information services which are considered as an extension of reference service place emphasis on intensive user–oriented, need-based reference services. Need and purpose of reference service are:

1. Users' information needs and demand for intensive services;

2. Growth of libraries in all dimensions and their complexities;

3. Modern tools and techniques developed for library and information services;

4. Volume and variety of documents , both print and non–print; and

5. Impact of information technology.

## Reference Functions

Reference functions may be discussed under two broad groups: *Responsive* and *Anticipatory*.

Responsive services are those that are provided in response to requests for assistance in finding answers to specific questions. These services deal with those who visit libraries in person, and others who choose to obtain services through telephone or seek assistance through letters or send telex/fax messages or even E-mail now-a-days. The questions or enquiries may range from simple fact-finding ones to more complex ones involving searches through a wide range of reference materials and other documents for obtaining the required information.

## Responsive Services

There are various ways in which requests for documents or information may reach the reference division of a library.

1. Personal visit by the user.

2. Visit to the library by a person who represents actual user.

3. Telephone call.
4. Written Communication.

**Need and Purpose of Reference Service**

1. It gives relevant information to the enquirer
2. It saves the time the users
3. It is a valuable service for the research scholars
4. It fulfil the five laws of library science
5. It helps to the readers for using various reference sources like dictionaries, encyclopedias, handbooks etc.
6. The tools and equipments like computers, micro readers etc are new to them and they do not know how to operate them.
7. There is a need for personal assistance in the searching and location of documents

**Functions of Reference Service**

American Library Association (ALA) has stated the following six functions of reference service.

a. **Supervision function**: This function consists of maintaining efficient reference through
    1. Proper organization of facilities
    2. Selection of reference materiel
    3. Direction of personal
    4. Study of the library users, requirements etc
b. **Information function**: The information function consists of answering to general and simple queries.
c. **Guidance function**: The reference librarian should be able to recommend good books in various fields. He should able to give guidance to the students regarding higher education etc.
d. **Instruction function**: The instruction function includes formal and informal library teaching as how to use the library in the best way
e. **Bibliographic function**: A bibliography is the systematic list of books. The bibliographies in various subjects of interest to the readers, should also prepared by the reference staff.
f. **Appraisal function**: The appraisal function involves selection and acquisition of right type of reference materials and the knowledge of how to get the most out of these materials.

**Types of Reference Service**

Reference service can be classified as : 1. Ready reference service; 2. Long range reference service

Ready Reference Service

According to S.R. Ranganathan, "Ready Reference Service is reference service finished in a very short time-in a moment if possible." i.e.) between 30 seconds and 30 minitues.

In the reference service the information is provided to the enquirer almost immediately. It is also called fact finding service, because it mainly deals fact finding deals questions.

Example:

1. What is the date of birth of Mahatma Gandhi?
2. What is the address of American Chemical Society?
3. What is the population of Poona?

Time is the very essence of ready reference service. The common types of reference books are the main sources of reference service. The queries admit of easy solutions. Usually specific bits of information are asked, and it is possible to furnish the information in a short time from the readily available reference sources i.e. reference books such as dictionaries, encyclopedias, year books, directories, atlas etc.

**Need for Reference Service**

Dr. S.R. Ranganathan has stated three main reasons. They are :

1. Nature of reference books
2. Nature of enquiry : a. absent enquirers; b. casual visitors; and c. regular customers
3. National economy

**1. Nature of reference books**: Reference book is totally different from an ordinary book. So the readers are not familiar with the use of reference books. Therefore it is the duty of the librarian to familiarize the readers with the use of reference books.

**2. Nature of enquirer**: There are three types of enquirers:

a. **Absent Enquirers**: Their enquiry is over the telephone and post. The reference librarian has to look up information on behalf of this class of absentee enquirers. Such enquires are received from various government offices, newspapers offices and private enquires etc.

b. **Casual visitors**: Some times, some visitors other than regular visitors come to the library. These are generally eminent persons, foreign dignitaries of scholars who enquire about various details of the library collection. Reference librarian has to answer their enquires.

c. **Regular visitors**: They are regular members of the library and come to the library regularly. The old members, being experienced persons, are capable of using the reference tools independently. But due to shortage of time they also need assistance from the library staff.

3. **National economy**: Sometimes the questions on a subject or topic are of repetitive in nature. Many enquirers will ask the same question. The same type of information will be required by various readers. In this way a lot of man-hours will be wasted, if the readers search for it individually. The reference librarian might have the answer about such query, readily available with him. This will result in saving of time and will achieve national economy.

**Procedures in ready Reference Service**

S.R.Ranganathan suggests three processes in providing ready reference service. They are

a. Preparation
b. Service
c. Assimilation

**a. Preparation**: Before providing service to the readers the reference librarian should make ready for the service. This means that he must become familiar with reference collection of his library. He should also know the latest editions, additions enlargements etc.

**b. Service:** Service means rendering help to the reader in getting relevant information. Ranganathan suggest the following factors to serve the readers.

a) **Training the enquirer in fact finding**: Training should be given special consideration in providing orientation to new users. The training should be in a form, readily acceptable to the users.

b) **Setting the enquirer on the right track to help himself**: The readers sometimes require assistance to the extent that they can be set along a right track. The reference librarian will

direct the reader to the sources of information and the reader should become capable of using the reference tools.

c) **Furnishing the exact information**: A persons sends his query through post or phone then he would have to be furnished with exact information.

**c. Assimilation**: At the time of preparation or providing reference service, the reference librarian should think weather the piece of information is again sought by other readers. In that case a record of such service is to be made in the reference register. Due to this recording of such services, the reference librarian is able to convert the long range reference service in to ready reference service. The reference library staffs are also expected to share their experiences with other staff.

Long range Reference Service

This service may take more than 30 minutes and the duration depends upon the user needs. The process of information flow may take days, months and years. The long range reference service is a special service of a research library**.**

Long range reference service and ready reference service differ in the time involved, the materiel used and the nature of information sought. This service is takes too much time to provide the information to the researchers, to collect the required information after a great search and investigation. The time consuming factor is being taken in to consideration for its specialties. The following are the points and elements.

a. **Time**: Long range reference service cannot be rendered immediately. Dr.S.R.Ranganathan "few long-range reference questions take less than half-an-hour, while some take a whole day and even weeks".

b. **Sources of information**: In ready reference service, the search is usually limited to ready reference sources like dictionaries, encyclopedias, yearbooks, biographical sources, who's who etc. But in the long range reference service, the search starts with ready reference sources in information and it is continued in to ordinary books, reports, non-book materials, periodicals etc. If necessary the search may be carried to libraries in the other parts of the world. If the recorded sources do not give requisite information, then the living persons, eminent in their respective fields may have to be consulted. For providing long range reference service the reference librarian should know about the developments and trends in the universe of knowledge.

c. **Nature of information**: In ready reference service, we are mainly concerned with facts. But in long range reference service, one has to deal not only with facts but also with other types of specialized information. The long range reference service the questions of the queries are complicated due to the following reasons:-
    1. Enquiries about recent information
    2. Specialized enquiries
    3. Information sought from a particular point of view
    4. Out dated information
    5. Complex information
    6. Language problem

The following are the queries for long range reference service (examples)

1. The application of LASER in Medicine
2. How construct a ROBOT for performance of laboratory works etc.

Librarian should be familiar with different documents and have in touch with learned societies, associations, research institutions, subject specialists etc. In addition, he should be an expert in information processing and retrieval and presentation.

**Types of long range reference service**

1. Current Awareness Service (CAS)
2. Selective Dissemination of Information (SDI)
3. Documentation Service
4. Translation service
5. Reprographic Service
6. Bibliographic Service
7. Abstracting and indexing service

## Current Awareness Service (CAS)

Current awareness services are designed to keep the user abreast of information in their area of work or interest that has recently been published and received or identified by the libraries or information units, particularly in specialised subject fields. To accomplish this purpose, information products at various intervals of time are issued. Such services anticipate specific needs of users and draw their attention to new developments and, thus enable them to follow what is happening in their subject fields.

Definition of Current Awareness Service

Alsadiar Kemp has defined Current Awareness Service (CAS) as, " a system for reviewing newly available documents, selecting items relevant to the needs of an individual or group, and recording them so that notifications may be sent to those individuals or group to whose needs they are related." According to him, CAS is " a system of informing users as soon as possible after publications." It should be provided before publication in secondary sources.

Thus, CAS is:

1. The process of reviewing of selected items according to the information needs of the users.
2. Selecting the relevant items according to the information needs of the users.
3. Recording the items systematically.
4. Sending notifications to the users who need it.

## Characteristics of CAS

Current awareness service is that dissemination service which is intended to keep a user abreast with the latest information or development in his field. It is an announcement service to satisfy the current approach to information. Current awareness service is provided to update the knowledge of the researchers in their area of work. Some of the characteristics of CAS are:

1. CAS is provided to meet the current information requirement of the user.
2. CAS is an announcement mechanism.
3. CAS is usually provided to a group of users such as researchers, scientists, etc. (having homogeneous information requirement), and not to the individuals.
4. It is neither a pinpointed information; nor a tailor made or customised information.
5. It is meant for a panoramic view of current developments.

6. It may be presented in a printed, electronic, or any appropriate form acceptable to the user.
7. It is to be provided within a timeframe much before the information is published in secondary sources such as indexing and abstracting sources.
8. It is a continuous service.
9. Speed, currency and ease of use are three factors to determine the efficiency and effectiveness of CAS.

Need of CAS

Current Awareness service is needed because of the following:

1. Growth of literature
2. Interdisciplinary nature of research
3. Types and forms of documents
4. Need of help.

Methods of CAS

The following methods are specified for providing current awareness service

1. **Current awareness bulletin**: It can be in the form of a news bulletin giving items of current general information or a list of recent additions or list of contents of periodicals arranged according to alphabetical order. It includes activities and services of the library.

2. **Selective Dissemination of Information**: SDI is advanced kind of service directed towards individuals. This is highly personalized service, matching of the information with the interests of the clientele.

3. **Selective Dissemination of Documents**: This service is to cater to the selective search of the user at remote locations, who thereby lack direct access to the materials and services in an information center.

4. **Routing of periodicals**: It is a very important means of dissemination of information. In special libraries or information centers very often the bound volumes of periodicals are circulated but the current issues are routed.

5. **Display of newly arrived materials**: Most of the libraries display their recent acquisitions through notice board.

6. **View data**: View data is the generic name for three services developed in Great Britain as a means of conveying current information. These services are Cerfax(BBC), Oracle(ITV) and Prestel service(run by post office telephones). This involves use of television equipment with special devices incorporated or attached for conveying of current information. It is the kind of information which changes from day to day or from hour to hour, general news to local news.

7. **Telephone calls**: A good librarian does not hesitate to telephone or visit a client with news or copy of an item known to be wanted urgently.

8. **Announcement of Research in Progress**: The purpose of this service is to inform the user about the research projects.

9. **Notification of forthcoming Meetings**: Informing about the forthcoming meetings is also an important CAS. This service is of particular importance to a research worker.

10. **News Clipping Service:** Another CAS to disseminate information about current events is the Newspaper Clipping Service. It takes time before the news items are reported in the digesting periodicals and therefore, a necessary of such service.

**Selective Dissemination of Information (SDI)**

Selective Dissemination of Information (SDI) is a type of current awareness service meant to keep the user abreast with the latest developments in the field of his interest. It is a personalised service meant for the individual or a group of users having identical information needs. It is a quick service which provides the pinpointed and exhaustive information to the users.

Definition of SDI

The concept of Selective Dissemination of Information was first described by H.P. Luhan in 1961 for the scientist or engineers in IBM. According to him, "the SDI is the service within an organisation which concerns itself with the channelling of new items of information, from whatever sources, to those points within the organisation where the probability of usefulness in connection with work or interest is high." SDI involves the screening of the document and selecting the information according to the specific information needs of each user or group of users.

Characteristics of SDI Service

The following are the characteristics of SDI service are as follows:

1. It is a computer assisted service.
2. SDI is concerned with current published information
3. The source of current information may be available both within the organisation and outside it.
4. The new information should be disseminated to the users such as scientists, researchers, etc.
5. The channelling or directing of this information depends upon the nature of his interest.

Objectives of SDI Service

1. To provide current information on a predefined area of interest.
2. To receive, scan, and provide the literature/information to the right users at the right time.
3. All the current information which is relevant to the interest of the user must be brought to the notice of the user.
4. All the relevant information which is published elsewhere in the world should be located through various sources.
5. To achieve the current requirements through the scan of current materials such as journals, bulletins and other important resources.
6. Only the selective and relevant documents should be brought to the notice of the users.

Principles of SDI

In SDI service, the interest of each user will have to be studied first and compared with the contents of the incoming documents. For each user, a description of his information needs called a 'user profile' is prepared and recorded in machine readable form.

For every document entering the system, a document record is prepared and this is also converted into machine readable form, called a 'document profile'. When the document record matches with a user profile, it is called 'record of relevant documents'. At regular intervals, the new documents entering during the period are compared with the profile. It is called matching of records.

When the document profile matches with the user profile, it is recorded as hit for the profile. Then the matched records are sent to the individuals.

Components of SDI

SDI has the following operational components:

1. Creation of the user's profile.
2. Creation of document profile/database of resources.
3. Matching the contents of the user profile with the document profile.
4. Retrieval of the required information.
5. Notification of the retrieved information to the respective user.
6. Feedback from the user.
7. Modification based on feedback provided by the user.

## Documentation Service

## Translation Service

Now-a-days, literature is being published in various forms, subjects, and languages. Literature, especially in the field of science and technology, is published in so many languages. The scientists would also like to know what has been published in languages which are not known to them. They, therefore, need a service to get such literature translated into language known to him. Translation centers are set up by various organisations and associations to provide translation services to the users.

Definition of Translation

According to Random House Dictionary, "translation is to turn (something written or spoken) from one language into another." Webster's International Dictionary defines translation as "to turn into one's own or another language." American Heritage Dictionary defines translation as "to express in another language, systematically retaining the original sense."

Thus, translation is conversion of one language into another language but retaining the original sense. The original language is known as the *source language* and the translated language is known as the *target language*. Translation is conversion of known language (target language) from the language not known to the user (source language). The major reason for the need of translation service is language barriers and modern science is an international perspective.

Objectives of Translation Service

The main objectives of translation service are as follows:

1. To provide a document in user language.
2. To save the time of researchers, scientists and other scholars.
3. To promote the use of documents.
4. To promote cultural understanding.
5. Establishment of cooperation and coordination with international organisations, agencies, etc.

Types of Translation Services

Translation may be of the following types:

a. Cover-to-cover Translation: Translation of all the contents of the documents.
b. Selective Translation : The translation of the major points of the documents is selective part of documents
c. Oral explanations/translation of the contents of the documents.

Translation Centers

The translation service can be provided by the following institutions or individuals.

1. National Documentation centre
2. Special Libraries
3. Documentation centers attached to Research and Development establishments.
4. By freelance translators.

The translation service may be provided by developing in-house translation facilities or through some other agencies, organisations etc. especially meant for translation work.

Objectives and Purposes of translation centers

1. One of the objectives of translation center is to guide the enquirer to the correct sources of availability of translation service.
2. Translation centers provide the complete bibliographic details of the translated publications along with abstract in English language.
3. They also supply the source from where translation can be obtained along with the charges of translating the documents.
4. They also provide the information about the translation in progress.
5. These centers also provide information about the pooling with other agencies in the country.

Translation Services in India

The following agencies are providing translation services in India.

1. INSDOC (Indian National Scientific and Documentation Center) and now NISCAIR (National Institute of Science Communication and Information Resources).
2. Indian Institute of Science (IISc), Bangalore.
3. Indian Statistical Institute (ISI), Calcutta.
4. Bhabha Atomic Research Center (BARC), Mumbai.
5. Indian Association of Special Libraries and Information Centers (IASLIC), Kolkata.
6. Defence Scientific Information and Documentation Center (DESIDOC), Delhi.
7. The National Council of Educational Research and Training (NCERT) and National Book Trust (NBT) are both engaged in translation of textbooks in various Indian languages.
8. The State Council of Educational Research and Training carries out translation work from English into state languages or vice versa.
9. The Central Hindi Directorate, Hindi Academy and Sahitya Academy carry out translation work. The Sahitya Akedemy has also instituted a prize for the Best Translator.
10. The School of Foreign Languages (SFL), Delhi, conducts courses in Chinese, French, German, Japanese and Russian languages for defence personnel and sponsored candidates. The School also undertakes translation work.
11. The Central Institute of English and Foreign Languages, Hyderabad, and The Institute of Asian Studies, Madras conduct language courses and perform translation activities.
12. The Indian Council of Cultural Relations, Delhi carries out literary translations of books and other documents to project Indian cultural heritage to the world.

Reprographic Service

The term 'reprography' is used for photocopying as well as duplicating documents. The term 'reprography' is coined from two terms namely 'reproduction' and 'photography'. It means copying and duplication processes for the preparation of one or more copies of the documents. It includes reproduction techniques such as photocopying, microfilming, contact printing, etc.

Reprography plays an important role in the field of dissemination and communication of information. In the age of information explosion, the demand for reprographic services has

increased considerably. It helps the researcher to get relevant literature related to his subject from various sources.

## Need for Reprographic Service

Reprography plays an important role in the dissemination and communication of information. Reprography can solve the following problems:

a. Storage Problem: Library is a growing organism. There is a space problem in the library and it can be solved by microfilming.
b. Preservation: The rare and out of print material can be preserved by converting them into digital form. Rare materials such as old manuscripts etc, can be preserved by converting them into microfilms.
c. Inter library lending: Only the relevant portion of the required document can be sent on inter library loan either by Xerox copy or its micrography.
d. Economical: It is economical to reproduce expensive material using reprographic techniques.
e. Longer Life: Documents reproduced in microforms have longer life as compared to paper form.
f. Reduce the size: Modern reprographic techniques can reduce the size of the document, especially copying of engineering drawings, maps, and microfilms. This reduced form is easier to handle, store and transport.

## Reprographic Services

Reprographic service includes:

1. Copy of documents
2. Copy of documents on microform or digital format.
3. Digital images : scanning of document
4. Production of microfilms, storage in digital form.

## Bibliographic Service

In order to provide effective library services, provision of bibliographic service is important. Bibliographic services are provided on demand by the special libraries and universities. These bibliographic services include compilation of subject bibliographies, union catalogues etc. Compilation of bibliographies on various topics of research is very important for the researchers and these are the basic instruments of research. Some of the important aspects in compilation are:

a. Objective and Purpose
b. Selection of topic
c. Scope of the topic
d. Coverage with reference to type of documents
e. Supportive index.
f. Updating procedure
g. Mode of production

## Abstracting and Indexing Service

Due to the increase in available literature, an average reader is usually unable to keep himself up-to-date with or sometimes even keep track of documents or information in his/her field. In this context abstracting as well as indexing services can play a very important role in keeping them well informed.

According the Maizell and others, "An abstract, simple defined, is a condensation that presents succinctly, the objectives, scope, and findings of a document."

UNESCO defined the abstracts as "a summary of a publication or articles accompanied by an adequate bibliographic description to able the publication or article to be traced".

In simple words, an abstract is a summary of a document along with adequate bibliographical details, so that one can trace the document. The concerned documents may be a book, an article from a periodical or some other form of recorded knowledge.

**Purpose of Abstract**

1. Provide the users with all the essential information
2. To save the time of the user.
3. To locate the document.

**Use fullness of Abstracts**

1. It saves time
2. It serves as a rapid survey of retrospective literature.
3. It substitutes for the original in many cases
4. It provides more accurate information about literature than any other tools like catalogue, bibliographies, indexes.
5. It is very much useful for writing reviews, preparing talks and compiling bibliographies.
6. It promotes current awareness
7. Abstracts facilitate for selection.

**Qualities of Abstracts:**

1. It should be informative, clear, accurate, precise and reasonably brief.
2. It should present new data which may not have been reported previously in the literature.
3. It should not include any criticism
4. It should not include negative results.
5. It should include the authors own view
6. It should include indexes.

**Types of Abstracts**

There are two major kinds of abstracts, namely

a. Indicative or descriptive
b. Informative or comprehensive.

Indicative abstracts:     Indicative abstracts merely tell briefly what the document is about.  It summarizes the contents in brief, indicating the scope and contents of the documents.  It does not serve as a substitute for reading the original document.  The primary purpose is to give the user several clues as to whether or not the information being sought is contained in the original record.

Informative abstracts:  Informative abstracts are longer and present the essential data and conclusions.  So that the reader has no need to refer the original document.

Indicative abstract can be prepared in a shorter time and is economical.  It meets the requirements of generalists, but experience shows that specialists prefer informative abstracts.

**Online Service**

Learning Resource Centre

**Learning Resource Centre (LRC)** is a term which is used in the United Kingdom to describe a type of library that exists within an educational setting such as Secondary Schools, further Education Colleges and Universities. LRC can also stand for Library Resource Centre and in some cases Learning Resource Centre has been shortened to Learning Centre. Learning Resource Centres are similar to Hybrid library. These centres contain traditional educational resources such as books, journals, software and audio/visual materials, but they also exist to promote electronic information resources. Examples of these are subscription electronic journals, databases, free websites and other web based resources. The traditional Librarian role has been replaced with the LRC Manager who is an Information Professional with qualifications recognised by CILIP. As well as managing the physical environment of the LRC the LRC Manager is usually involved in editing LRC web pages and making contributions to the Virtual Learning Environment, in order to provide access to quality and timely resources to colleagues and students. A key aspect of a Learning Resource centre is the application of self study in a variety of different ways. They usually include computers, places to study and often private rooms. LRCs usually have a responsibility for the teaching of Information Literacy and/or Study Skills within the institution they are in.

ORGANIZATION OF INFORMATION

Collection Development Policy of information resources for Teacher Education institution Libraries

In modern times useful information is available not only in the traditional types of documents like books and periodicals but in other formats like audio-visual materials, microforms, plans, maps, models, manuscripts, pamphlets, etc. These types of documents are known as Non-book materials or Non-conventional documents. All of them and the conventional books and periodicals together are known as "Information Records" or "Information Resources".

A modern library therefore should enrich its collection of information records keeping in mind the needs of its users – potential as well as actual. In addition, it should also see that the information available in its documents is relevant, nascent and authentic. A library can serve its real purpose if it acquires, processes and puts to use documents that are useful to its users. Collecting latest documents relevant to the aims and objectives of the parent organisation within the constraints of the funds and infrastructure available is a great task for any library. Teacher education institution libraries are mainly to develop library collection to meet the information requirements of teacher educators, student teachers and research scholars in Education. So, in addition to the textbook, books of pedagogical nature in various discipline, books of philosophical, sociological and psychological perceptives and reference sources mainly for day-to-day class room teaching and learning and non-book materials becomes major collections in Teacher Education Institution libraries.

Definition and Meaning of Collection Development

Encyclopedia of Library and Information Science says " Library Collection is the sum total of library materials – books, manuscripts, serials, government documents, pamphlets, catalogues, reports, recordings, microfilm reels, microcards and microfiche, punched cards, computer tapes, etc. – that make up the holdings of a particular library". Collection development in a library therefore would mean building up and improving the collection in that library.

The term Collection Development has evolved to emphasise the need to respond to user's needs. Bloomfield (1987) says "to meet the demands, librarians have evolved theories of collection development, which imply a more active role in managing libraries collection and indicate that the role may change and develop in response to changing conditions". With the change in our outlook towards library and information services we are now more conscious of user needs; usefulness of information, available with us, and exhaustive and expeditious dissemination of information.

Purpose of Collection Development

Collection development implies selection, acquisition and evaluation of the library collection in order to see that both print and non-print materials that are available in a library are really useful to the clientele. Collection development therefore dispenses away with arbitrary selection and acquisition of documents. Similarly it envisages periodic evaluation of the library stock both to improve its collection as also to weed out the irrelevant, outdated and unnecessary documents from the library. It also means that users' needs should be kept in mind while building up the collection. The purpose of collection development now becomes clear. Its purpose is to find out the users information/document needs to:

- fulfill the library's obligation to the user community to provide relevant and nascent information.
- find out the users information/document needs,
- select and acquire documents that are really useful to the clientele,

- adopt systematic and judicious spending on document collection, keeping the objectives of the service in mind, and
- periodically review the collection for weeding out unwanted and outdated documents from it.

## Prerequisites of Collection Development

Collection development is an interplay of the library's aims and objectives and the strategies of the librarian and his staff in order to meet the users needs within the constraints of the library. For this purpose the library has to formulate a clear policy of the acquisition, periodic evaluation of the collection and the systematic weeding out of documents.

Bloomfield observed that the collection development involves identification of some of the key issues like:
- Identification of the purpose and mission of the library/parent organisation.
- Formulation of library's collection development policy by library committees or by library staff.
- Matching between users requirements and institutions aims and objectives.
- Budgetary provisions and the contingent problems.
- Working out the strategies for implementing the policies and programmes; and
- Maintaining, revising and updating policy statements.

## Collection Development Policy

Collection development policy is the course of action adopted for developing the collection or stock in a library. A policy can be unwritten convention or a written document. The American Library Association's Collection Development Committee when preparing "Guidelines for the formation of collection development policies" assumed that "a written collection development policy is for any library a desirable tool which enables selectors to work with greater consistency towards defined goals, thus shaping stronger collection and using limited funds more wisely".

A written collection development policy is preferred to non-written policy. Katz (1980) and several others feel that CD policy should be a written policy. Futas (1977) states that a written policy "encourages stability and continuity in the library operations". Feng also feels that such a policy statement assures a consistent and balanced growth of library resources".

## Advantages of Collection Development Policy

The Collection Development policy is in written form. From time to time the library may have to review its CD policy due to policy changes of the funding agencies or the parental organisations. But, by and large many aspects may remain the same. Several authors like Katz, Magrill and Hickey mentioned the advantages of a written Collection Development policy. Their views can be summarized as follows:

A Collection Development Policy:

1. expresses openly its relationship with the objectives of the parent organisation/ library.
2. forms the basis for planning collection development.
3. provides practical guidance in day to day selection of reading materials free from personal bias.
4. helps in determining the best method of acquisition.
5. supports and assists in justifying the selection/collection. CD policy offers some help against censorship by a clear statement of the type of materials to be purchased and indicating that the policy has the support of the library authority/ committee.

6. acts as a rational guide for budget allocation and also helps in long range budget planning by stating priorities and outlining growth and development goals.
7. Helps in making best use of resources.
8. facilitates cooperative programmes like inter library loans, resource sharing and networks.
9. assists in establishing methods of reviewing materials before purchase.
10. offers suggestions on types of materials to be stored, weeded out and discarded.

A Collection Development Policy should essentially state the policies of the library on:
a. the selection and acquisition of reading materials;
b. the nature and method of periodic evaluation of the reading materials available with it;
c. the storage and weeding out of the collection;
d. resource sharing and networking.

The guiding principles for evolving the Collection Development Policy are :
1. the goals and objectives of the organisation/institution.
2. the needs of the user community, actual users as well as potential users; and
3. the availability of financial and other resources.

Components of Collection Development Policy

A Collection Development policy should cover the selection and acquisition policies; the evaluation programme; the storage and weeding out policies and the resource sharing and networking programmes. In a summarized form, Katz lists the various components of a collection development policy as follows:
1. Objectives of the library
2. Philosophy of the library
3. Purpose of the library
4. Brief description of the community
5. Who is legally responsible for the operation of the library and selection of materials.
6. Method of selection as well as limitations of budget served, different age groups of users and similar information.
7. Type of materials excluded.
8. An indication of how the collection is to be built in terms of a) level of collection intensity b) language c) chronological period covered d) geographical areas collected c) form of materials collected, and f) who is responsible for selection.
9. Acquisition of foreign language materials.
10. Statement of handling gifts.
11. Clarification on weeding out and discarding practice; and
12. Statements regarding intellectual freedom.

The above points give an idea as to what items are to be covered when Collection Development Policy is prepared.

Document Selection

The term 'document selection' denotes the idea of adding books/document to the library. The term can simply be expressed as s function which relates to the choosing of reading materials. The term 'documents' includes the text books, periodicals, reports, microforms, theses and dissertations, computer tapes etc. The term 'selection' means the choice of material. In order to develop good collection, documents of various types and in different forms are to be procured. Therefore the librarian should know some of the important types of documents, their characteristics and utility. There are certain principles that help the librarian to choose maximum number of best books at minimum cost. The scholars who propounded the principles for selection of documents/books are **Melvil Dewey, McColvin, Drury** and **Dr. S. R. Ranganthan**.

Selection of reading materials is both an art and science. The following principles of selection are most important and should be given weightage. They are as follows:

## A. Melvil Dewey

The concept of 'best reading for the largest number at the least cost' was propounded by Melvil dewey in 1876. His theory can be studied under three heads namely:

1. Best reading
2. Largest number; and
3. Least cost

Best reading means, the books which give maximum satisfaction to the readers. The book which provided knowledge, inspiration and pleasure can be termed as the best reading books.

Largest number means the readers of the library, both actual and potential readers. To serve largest number of readers, the librarian must have an insight into the reading community. The interests of the readers must thoroughly be assessed by the librarian.

Least cost means, procuring maximum number of books, providing maximum possible service at a cheaper cost. The lesser budget, the greater is the caution required for the selection of books.

## B. MvColvin's Theory

McColvin theory is based on 'Demand Concept'. According to him, "Books in themselves are nothing. They have no more meaning than the white paper upon which they are printed, until they are made serviceable by demand." Demand is large governing factor in book selection. Demand for books, according to McColvin, should be differentiated according to its value.

Variety and Volume

Value has been defined as "the force tending to the development of mind, the enrichment of experience and the promotion of understanding."

Book selection must be done to satisfy the variety of readers. Hence, variety of demands determines the book selection. Giving importance to one particular sector and neglecting the other sector will forfeit the purpose of book selection. The taste of the readers are varied and different form one to another.

Volume of demand is the other important factor in book selection. To assess the volume of demand, volumes of reservations made for a particular book; reader's request for new books and circulation statistics of each and every book.

## C. Druy's Theory

Drury's theory of book-selection is 'to provide the right book to the reader at the right time'. This principle falls into three parts:

- Knowledge of books and sources of information
- Knowledge of Reader's Needs
- Administrative Efficiency

These three parts are to be integrated for efficient book selection. Thorough knowledge of books, and thorough understanding of reader's needs alone are not sufficient for book selection. These two factors should be supported by the administrative skill. Procuring the right readers, according to Drury lies on the following.

1. Suitable standards for evolving the best books.

2. Duplicate the best rather than acquire many.
3. Select for positive use.
4. Be broadminded in selecting the books.
5. Do not be intolerant of fiction.
6. Know publishers, their output and specialities.
7. Know costs and values of books.

Now the right books are procured for the right readers. They are to be given to the readers at the right time. This is possible only because of administrative skil.

D. Dr. S.R. Ranganathan's Five Laws

Ranganathan has contributed five laws of library science that helps as aa guiding principle for book selection.

First Law : Books for use

First law emphasis some guiding principles for the selection of books. They are as follows:

1. Books that have good appearance alone are to be purchased.
2. The books which have the size, shape and weight so as to handle easily are to be purchased.
3. Books which have nice printing can be preferred.
4. Books that are written in the languages that are preferred by the readers are to be selected.
5. Reference books which have more coverage, illustrations alone are to be purchased.

Second Law: Every Reader his/her Book

The second law is books for all. All the readers should get the books. The following are may be taken to satisfy this law.

1. Reader's suggestions are to be considered.
2. The Reference Librarian may be consulted for Book-selection.
3. In public library, preference may be given to the books that are written in local languages.
4. In university library, research oriented books should be given top priority.
5. In school library, books have more illustrations are to be procured.
6. Periodicals of the urban region should be preferred.
7. For blind, the books in Braille or sound records are to be purchased.

Third Law: Every Book its Reader

The third law emphasis is on the book. Almost all the messages of second law are applicable to third law also. In addition the following may be added.

1. The books that have sure effect can be selected so that the old books may be put in circulation.
2. Avoid selection of books by title alone without proper evaluation.
3. Librarian should take this work, as a sacred duty.

Fourth Law : Save the time of the reader

The fourth law is 'save the time of the reader'. Here importance is given to the time factor. To save the time of the readers, books are to be purchased as follows.

1. Delay in selection should be avoided.
2. Up-to-date reference books are to be purchased.
3. Reasonable numbers of text books are to be purchased.
4. Commentary for the classics should be selected.
5. Current and core periodicals alone are to be purchased.

Fifth Law: Library is Growing Organism

The fifth law is 'Library is Growing Organism'. Library grows in all aspects. Increase in the rate of readers has a direct impact on the purchase of books. To meet the increasing demand of books the following nature can be purchased.

1. Microfilms should be selected for the non-availability of original books.
2. New editions of classics are to be selected.
3. Translations of the important works are to be procured.

The above mentioned principles, theories and laws help the librarian to choose best documents. No Library is financially sound; hence books are to be selected as per the guidelines of the experts. Strict observance of these principles will enable a librarian to build his library with best books.

Sources for the Selection of Document/Books

With the limited budget, the librarian has to purchase as many good books as possible. So, sufficient care is to be taken at the time of book selection. Book selection is an art and it is an important function. It is difficult for a librarian to select books that are published by different publishers in different areas. So he/she is depending upon certain sources for this purpose.

a. Reader's Suggestion

Reader's suggestion is one of the sources for the selection. Every library has a suggestion box to assess the needs of the readers. Readers, as users can give best suggestion to procure the best books.

b. Reviews

Books that are published recently are reviewed. This is a good source for selection of good books. Times of Literary review, Science books (quarterly review), Biological Reviews, ILA Bulletin, Library Herald, etc. Are some of the reviews that help the librarian in selecting the right books.

c. Trade catalogue

Trade catalogues are acting as the main source for book selection. Some trade catalogues carries annotations also. Indian Books in Print, British Book News etc. Are all some of the reading trade catalogues.

d. Bibliographies

Bibliographies are also a good source of book selection. Bibliography is a list of books. It contains the name of the author, title, publisher, price, pagination, size etc. Now the annotated bibliographies are also available which gives the thought content of the books in a condensed form. Hence bibliographies are treated as an important tool for book selection. Ex. Indian National Bibliography (INB), British National Bibliography (BNB).

e. Theses and Dissertations

The doctoral theses and dissertations are also acting as book-selection sources.

f. Patents and Standards
The role of patents and standards cannot be under estimated. They act as an important tool of book-selection for special libraries. The patent offices of various countries publish patent information through official gazettes. The following are some of the agencies which publish patent and standards literature.

1. Official Gazette of the United States Patent Office
2. Patents Abstracting Journal.
3. Official Journal of the Patent Office, UK.
4. British Standards Institute.
5. Handbook of ISI Publications, New Delhi.

g. Microforms

Selecting microform literature is difficult when comparing to conventional form of documents. The following are some of the sources for microform literature selection.

1. Reader Microprint Publications, New York.
2. Subject Guide to Microforms in Print, Washington.
3. National register of microform master – Library congress.

h. Sources for Periodicals

Selection of core periodicals is an art. Research and higher education is solely dependent upon the popular and current journals. Following sources help the librarian in selecting core periodicals.

1. Ulrich's Periodicals Directory

2. British Union Catalogue of Periodicals

3. Index Bibliographies

4. Indian Periodicals in Print

The above mentioned document selection sources help the librarian to select better books out of the best books that are published throughout the world.

Accessioning of the Document

The accessioning section is planned to perform two sets of activities namely, accessioning or taking into stock all acquired documents, and passing the bills for payment. The books are purchased and reach the processing section. The acquired book in the library passes through a chain of technical processes before it available to the readers. For example, preparation, classification, accession and shelving is done in accordance with modern methods of library practice.

Accessioning Procedure

The following jobs are involved in accessioning:

• Arranging the bills and the books in parallel sequence.
• Entering details in the Accession Register
• Writing the Accession number on each book.
• Certifying bills.
• Transmitting the bills for passing work.
• Transmitting the books for processing.
• Noting and filling the cards.

Documents entered in the Accession Register date-wise according to their receipt in the library. All purchased books are entered in the order of bills. For this purpose, the bills have to be first arranged in the ascending order of their dates. Books covered by each bill then have to be arranged and kept in the order of in which they are listed in the bill. Books after books and bill after bill are then entered in the Accession Register keeping, the Accession number running continuously. The accession number getting assigned to each document entered in the Accession Register will be a unique number which can identify that document. The Accession Number is then written legibly

on the verso of the title page of the book. The same number is then noted in the bill against the item. After entering all the items covered by one bill a certificate must be furnished on the bill.

> "certified that all the books as per the bill have been duly entered in the Accession Register vide number from ........ to ........".

The bills relating to the books accessioned are then handed over for Bill passing Work while the books are sent to the Technical Department for processing. The cards belonging to them, after noting the date of accessioning and the Accession Numbers are filled in a tray labelled as "Books-in-Process".

Passing of Bills

The various job involved in the Bill passing are:

- Checking
- Certifying
- Passing
- Transmitting

A serious work involved in Bill Passing work is either double payment or over payment. Sufficient caution should be exercised to avoid both. Every bill should be carefully scrutinised by checking the calculations and totals, the conversion rates, and the trade discounts provided. When verified and found correct a certificate to that effect should be furnished on each bill. This should be read as:

> "Certified that the net published prices at the approved rates of conversion have been charged and agreed rates of discounts have been allowed"

Each certified bill together with the Accession Register should be placed with the librarian for the final passing. He should satisfy himself after checking the bill and the corresponding entries in the Accession Register. He then put his initials on the Accession Register and passes the bill for payment. This is done by writing at the bottom of the bill the words "Passed for Payment" and putting signature and office seal below. The passed bills are then transmitted to the Account Section for payment.

Accession Register: Accession Register is the basic record in the library about each document forming part of its collection. The general practice in libraries is to have a single register in which all types of documents whether purchased or received as gifts or on exchange or as deposit entered. But some libraries have the practice of using separate accession registers for gifts and for deposited items. A typical page of a Accession Register will be as follows:

| Date | Acc. Number | Author | Title | Pubisher & place | Vol | Ed | Yr | Pp | Source/ Bill No. & Date | Order No. & Date | Cost | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Technical Processing

One of the important sections in a library is the technical section as it occupies a pivotal position round which all other activities take place. This section in the library is also called by different names such as Processing Department, Technical Processing Section, and Cataloguing Department etc. Irrespective of the name, the objective and functions of the section remain the same. While the acquisition is responsible for the building up of a good collection, it is the section that transforms the collection of documents into serviceable units. Thus it achieve two functions namely technical processing which includes classification and cataloguing, and physical preparation of the documents for circulation and use by the readers.

Need for Technical Processing

1. Accelerated growth of information resulting in the production of a large number of documents and consequently, user problems of inadequate time to access.
2. Complexity in subject specialisation coupled with the interdisciplinary nature of information.
3. Demand from readers for better services, etc.

In addition, the second and third law of Library Science have forced the librarians to such procedures in the arrangement and management of the collection has resulted in the development of new tools called Vocabulary Control Devices – such as Classification Scheme, Thesauri, Catalogue card, Subject Lists etc – for the purpose of classification and indexing information.

Advantages of Technical Processing

1. It helps to develop systematic arrangement of documents/information and thereby facilitates storage and easy retrieval.
2. It facilitates analysis of queries put by the users.
3. It helps in the preparation of information services and products.

The technical section of the library may consist of various units such as classification unit, cataloguing unit, and book processing unit, etc., to carry out the technical processing. In small libraries, all the processes were carried out by single unit called Technical Section. Irrespective of the size of the library, however, it is necessary that this section be headed by a dynamic person with sufficient professional expertise and also be provided with staff to carry out the processing work.

Physical verification of collection

Physical verification of collection is otherwise called stock verification. Physical verification of collection implies the physical check up of the articles on record. Physical verification is carried out in almost all the business unit to assess the present status of collection. In libraries, the books are considered as the valuable property and their movements are to be watched. The librarian should be in a position to say what are available and what books are actually missing. For this purpose physical verification of collection is very essential.

Advantages of Physical Verification

1. Verification discloses the books that are lost.
2. It helps the library professionals to provide adequate safeguards to prevent further loss.
3. Misplaced books can be restored to their proper places and this result in rectification of stock.
4. The loss particular book on a subject enables the library staff to judge the popularity of such books.
5. Stock verification leads to the cleaning and dusting books and thus prevents their deterioration.

6. It provides opportunities to weed out books that are no longer in use as well as very old editions.
7. At the time of stock verification, the staff will acquaint themselves with the holdings of the library and thus help them to render better reference services.

Disadvantages

1. Because of the physical verification work, the regular work of a library is hindered due to closure of its normal services.
2. There is a feeling that physical verification yields no tangible results and it entails criminal wastage of money, materials and manpower.
3. The cost of physical verification does not cover the cost of books misplaced or lost, and therefore physical verification will be an extra expenditure.

Methods of Physical Verification in Libraries

1. Shelf List Method
2. Accession Register Method
3. Separate Register Method
4. Separate Sheet Method
5. Numerical Counting Method
6. Sample Method
7. Verification using ICT technology

Serial and Electronic Materials Management

Serial or periodical are to be library what cells are to a body. Since the serials contain primary information they play a vital role in research and higher education. Advancement in Science and Technology made another revolution in knowledge dissemination area called e-publishing and the information sources in digital form. Proper management of e-resources is necessary for easy retrieval and access.

Serial or Periodical – Definition

A serial/periodical is a special publication issued at regular intervals. Examples: magazines, journals, newsletters, etc. Information which are more up-to-date that in books can be found in periodicals. Periodicals contain the recent innovation in the particular subject, results of researches, surveys, findings and developments in the particular subject. They are considered as knowledge carriers.

Problems in Periodical Acquisition

Periodical acquisition is concerned with the following problems

1. Requirement of the readers
2. Unorganised book trade
3. Foreign exchange problems
4. Exchange rates
5. Advance payments
6. Missing Issues
7. Delay in receipt
8. Fixing Vendors

Acquisition of Periodicals

The aim of the periodical section is to purchase the core journals with the limited finance and with in minimum possible time. Problems in direct purchasing forced the librarians to purchase the periodicals through some vendors.

## Standing Vendors

Standing vendor is a body selected by the library authority for the supply of periodicals. An arrangement covering the following points is made by the librarian with the vendor.

1. Only current journal is to be supplied.
2. Back volumes are to be supplied, if specific order is placed.
3. Missing issues are to be replaced.
4. Conversion rates once accepted should not be violated.
5. The revised rates of the subscription can be charged by the vendor.
6. The vendor can be terminated, if they violate any norms and conditions.

## Ordering

a) New periodicals

For the procurement of new periodicals, complete bibliographical data is to be given to the vendor. Period of supply is to be mentioned.

b) Renewal

The periodicals that are already procured may be renewed and renewal notice along with payment should be sent to the vendor at least three months before the expiry date.

## Recording of Periodicals

The periodicals that are received in the library are to be recorded properly. They can be recorded in any one of the following methods.

1. Register System

In this system, separate pages are allotted for the monthlies, quarterlies, half yearlies and yearlies. This system is suitable for a library which procures very few periodicals.

2. Ledger System

Sometimes, the periodicals are entered in a permanent ledger. Here alphabetical or numerical order may be followed.

3. Three card System

Dr. Ranganathan's unique contribution to periodical entry is the three card system. He has introduced this system in Madras University Library.

Three Cards: Register Card; Check Card & Classified Index card.

The receipts are registered in the Register card. It shows when the journals are received.

The check card is meant for sending reminders if necessary. The cards are divided into 52 weeks so as to make entries for the weeklies.

The classified index cards are used for each periodical. In this method, all the periodicals are classified and the classified cards are arranged in a classified order. This system helps to know the periodicals that are procured in the library and the number of volumes for each periodicals.

4. Kardex System

Kardex is a cabinet produced by Remington Rand of India. It contains seven trays which can accommodate 500 card holders. For each periodical, two cards (bottom card and top card ) are used. Bottom card contains the following information.

   1. Name of the library
   2. Frequency (weekly, quarterly)
   3. Volume and issue Number

4. Title Page
5. Index etc.

The top card is fixed opposite to the bottom card. This card contains the following information.

1. Volume Number
2. Date of Publication
3. Date of receipt of the Bill
4. Date of Payment
5. Name of the Vendor.

Display

After procurement, all the periodicals are to be displayed in a proper manner. For this purpose, display cabinets are used. The current issue will find a place in the cabinet and back issues will be kept behind the current issue.

Compilation

As soon as the entire volumes of a particular periodical are received, immediately then all the volumes are bound and an accession number is given to that bound volume. We can say in other way round that this bound volume is now considered as a book.

Diaries

The above mentioned procedures and operations is controlled by maintaining two types of diaries. The first diary is used for weekly operations and the second diary is used for day to day operations

All the procedures clearly show that procurement of periodicals is not so easy when compared to the procurement of books.

Preservation

The preservation of reading materials in the library is very important aspect of library management which generally find a neglecting aspect in majority of the libraries. Except a few libraries, all others have paper based reading materials in the form of manuscripts, books, periodicals, charts, maps, etc. the reading materials are mostly organic in nature, which are due to natural decay and deterioration. In print documents, paper and other supporting materials used are board, cloth, leather, thread, ink, adhesives, etc. These materials are born for natural decay and nutrition to some living organisms. So the library materials need protection from the factors of deterioration. In library science, preservation is treated as active and intentional process; it is used both for traditional print and digital resources.

Definition of Preservation

Preservation is an art or process of preserving materials of a library. Preservation is defined in the library context, "*as the processes of keeping collections and the information they contain available for use as long as they are needed*".

According to IFLA (International Federation of Library Association) preservation *includes all the managerial and financial considerations including storage and accommodation provisions, stabbing levels, policies, techniques and methods involved in preserving library and archive materials and the information contained in them.*

Preservation is the maintenance of objects close to their original conditions as far as possible or until they are no longer needed. It is an integral part of collection development and the

provision of service to the users. Preservation is the most perplexing and unyielding problem confronting the libraries of the world today. It is a part of the core business of those libraries that seek to maintain their collections for ongoing use.

Need for Preservation

The purpose of preservation is to ensure protection of information of enduring value for access by present and future generations. The following reasons justify the need for preserving information materials:

- Records become old
- Diversity and complexity of recorded materials
- Limited budgets and escalation of prices
- Open access and library practices
- User's nature and behaviour
- Environment of the library.
- Nature of collections
- Life span of information materials
- Emergence of digital products.

Objectives of Preservation

The major objectives of library preservation includes

- To know how to preserve the reading materials in an academic libraries.
- To reduce the affect of factor such as fire, fungus, dust, human, etc.
- To maintain the historical value of information.
- To make it easy to use and handle.
- To make information survive longer.
- To provide worldwide accessibility.

Destructive agencies of Library Reading Materials

The destructive agencies or enemies of library materials are the following.

1. Environmental factors like light, heat, humidity and moisture, dust and dirt, and water.
2. Biological factors such as microorganisms, insects, and rodents
3. Chemical factors
4. Human factors and Disasters.

Preservation Methods of Library Materials

1. Sudden variations in temperature are important factor responsible for the deterioration of the reading materials. They should be kept in a comparatively uniform temperature. Various scientific methods can be employed for this purpose.
2. Direct sunlight reduces the softness of paper and binding. Therefore efforts should be made to avoid direct sunlight.
3. Moisture, humidity, etc., are the different factors, which damage the books and journals. The moisture in air can be removed by proper ventilation in the stock room. Dampness runs the paper and also becomes a breeding ground of many injuries insects.
4. Dust and dirt are also harmful to books. To avoid these dusting should be done in a warm and dry weather.
5. Several kinds of insects' earth into wooden articles. Some of the insects are Cockroach, White ants, Book lice, Book worms, etc. naphthalene bricks, Dry neem leaves, neem seed power and camphor tablets tied muslin bags should be kept inside the racks for keeping the pests away.

6. Some readers are in a habit of stealing and mutilating the reading materials. Thus they damage the library reading matter by misplacement, mutilation, theft, etc.

**Protective Measures**

The protection of library materials depends on constant vigilance and careful application of preservation process. The protective measures may be divided into two categories, namely preventive measures and curative methods.

Preventive measures are the processes taken in different states of library organisation and administration relating to protection of library materials before being affected by destroying agent. Preventive measures should be taken not only after the acquisition of library materials but from the planning of library building. Damp proof materials must be used in construction of the walls. Plastering of the walls should also be done with damp-proof materials.

The plan of the building should be prepared in such a way that direct sun-rays and Phenyl diluted with kerosene oil should be sprinkled on the shelves and naphthalene balls should be spread on the sides of the books. Dry neem should be placed inside the folds of the book pages. Formaldehyde chamber may also be used for curable measures. The vacuum fumigation chamber is more effective for damaged books and other objects. In the air tight chamber ethylene chloride, carbon tetrachloride or other fumigants are used and these on destroy all the insects effectively. Some other measures for preservation of documents are as follows:

- Proper handling
- Storage in a stable, cool and clean place
- Non-humid environment
- Avoid paper clips and marking with pens
- Avoid using rubber bands or string to tie-up a book.
- Digital preservation

Digital Preservation

Digitization refers to the conversion of materials that were originally created in another format into an electronic form. In other words it deals with the conversion of an analog image may be text or graphics into its corresponding numeric values. Digitization is a means of preservation of information materials. Digitization is a representation of the physical image of the document created by means of a scanner preserved in binary form on an electronic medium, and then 'interpreted' by a computer to be read on screen or printed out an paper.

Digital preservation is increasingly recognised as a vital part of managing digital resources. Digital preservation is concerned with ensuring that records which are created electronically using today's computer system and application remain available, usable and authentic in future use, so digital preservation consist of preserving more than just the record's bit stream for interpret the survival of the records without interpretation the bit stream is nothing more than a meaningless series of 0's and 1's(Haag, 2001). "Digital preservation" or "digital archiving" essentially aims at taking steps to ensure the longevity of electronic documents. The preservation policy of digital resources is of prime importance and should take care of the following aspects:

- Preservation of digital resources at different levels depending on its usability, functionalities;
- Continuous reviewing of the digital resources ensuring long-term access too them
- Weeding out obsolete information and invalid websites.

Recent developments in the information handling and management, the benefits of preservation and digitization could not be overlooked and augmented effectively in order to preserve and

disseminate for the future generations to come. Therefore, the information professionals are to be trained in the area of preservation and digitization techniques.

<span style="color:red">Membership in Village, Branch, District and State Libraries</span>

Using Library Resources for Classroom Transactions

Library is centre for information and fact finding. It is the centre or development as an excellence. Academic library is a soul, a pivot or core around which all the activities of academic institution revolve. Using of library resources for classroom instruction shows the need for library centered teaching and learning.

Library Centered teaching and learning means use of library resources such as books, periodicals, reference books, audio-video materials to teach the students. It is supplement to the class room instruction. Library is considered as a central point of information. All updated information are available in the library, which is useful both for the teacher as well as learners to keep update them. In library centered teaching, a teacher can use the library for preparing lecture, further education and guiding students for using reference books. A student uses the library for extra reading, preparing for creative essays and competitions and classroom work.

Nature of Library centered teaching

1. It involves self study and develop the habit of life-long learning.
2. It involves study in group (Social learning & Mutual learning).
3. It involves finding solution to specific problems or queries.
4. It leads in depth study of the topic.
5. It leads to interdisciplinary study.
6. It leads to meaningful learning.

Library centered teaching is possible through :

- Proper and adequate organization of library.
- Easy availability of reference materials
- Conducive atmosphere in the library
- Library orientation programme

Advantages of library centered teaching

1. Use of library resources for class room instructions keep the teacher and taught with latest information.
2. It leads self education among the readers.
3. It helps the students for their competitive examinations.
4. It also promotes the creativity of learners.
5. It also guides the students for presenting paper in the conferences, seminar and symposia which in turn helps for their independent learning.

Encouraging Reading and Referring Habits

Reading for the intellectual growth is as important as eating for the physical growth of a human being. The famous words of Francis Bacon,

Reading maketh a full man
Conference a ready man, and
Writing an exact man.
Some books are to be tasted
Others are to be swallowed, and

Some few to be chewed and digested.

The great thinker Ruskin called books, 'kings treasuries'. What he meant was that kings kept money, gold, silver and precious stones locked up in their treasure house. Similarly there are great riches locked up in the books and magazines. But the riches in books are not gold and silver, but wisdom and knowledge, which are more precious than money. The magic word, or key, that opens books, is reading, and anyone who can read can go in and take as much knowledge and wisdom as one can find. Reading gives us great pleasure, trains our mind, make us think and teach us much. In addition to the teacher, librarians are expected to command this invaluable resource, and consciously cultivate the joy of reading among the users. The joy of reading a good book cannot be described, it is to be experienced.

Similarly, the habit of referring is to be cultivated from the early stages of their education. They are to be motivated to write or prepare creative essays with suitable phrases quoted from the eminent writers or thinkers. For the purpose, they are motivated to use the reference book such as encyclopaedia, dictionary, handbook, bibliography, yearbook, etc.

Preparing Bibliography and Indexes

Bibliography

Bibliography is defined as "a list of books of a particular author, printer or country or of those dealing with any particular theme, the literature of subject".

The term '*Bibliography*' is derived from two Greek words '*biblion*' and '*graphein*' which mean '*book*' and '*to write*' respectively. Thus bibliography is described as the writing and transcription of books. The concept of bibliography includes list of books, serials, pictures, maps, manuscripts and any other media of communication.

Functions of the Bibliography

The functions of bibliography are:

1. To assist the users in locating a documents.
2. To promote the usage of existing knowledge.
3. It provides bibliographical items like author's name, title, imprint, collation, edition, etc.
4. The annotated bibliography indicates the manner in which the subject matter is treated.
5. It serves as a guide to the literature on subjects.
6. It helps the user to verify titles.
7. It helps to collect data on an author.
8. It helps to prepare new bibliographies.

Types of Bibliography

Bibliographies are usually divided into five types namely

1. Systematic or Enumerative Bibliography
2. Analytical or Critical Bibliography
3. Descriptive Bibliography
4. Textual Bibliography
5. Historical Bibliography

Systematic/Enumerative Bibliography: it enlists details of groups of books which have some aspects in common. *E.g.* Bibliography on Educational Psychology

Types of systematic bibliography

Commonly recognized types of systematic bibliography are given below:

1. Incunabula or book rarities bibliography
2. General or universal bibliography.
3. National Bibliography
4. Selective Bibliography
5. Trade bibliography
6. Subject Bibliography
7. Author Bibliography
8. Bibliography of Bibliographies.

Analytical Bibliography: It deals with the physical format through which the contents are presented. It provides physical description of the reading materials in addition to the usual bibliographic details.

Descriptive Bibliography: It describes each of the rare items and to states to what extent it different from the ideal copy.

Textual Bibliography: It is concerned with the author's word and tries to determine the exact words that constitute the book. It is the study of the contents of the book. This bibliography is most useful to the literary critics.

Historical Bibliography: It looks at a book itself and its history to assess its influence in the social and cultural developments of a country.

Writing a Bibliography

The term publication style includes all the conventions in word choice, spelling, capitalisation, choice of typefaces, symbols and abbreviations, and presentation of numerical data characteristic of a publication. The Chicago Manual of style (Prentice Hall) is a comprehensive style manual for editors. In India we have one detailed Style Manual by Chandra and Saxena for general writing of various types.

Style manual helps in the presentation of material (information) in a readily-understandable format. This adds grace and distinctiveness to the text. If you study any text or a journal in any of the modern Indian languages and compare it with a similar one in English you will notice lack of uniformity in the presentation of materials in Indian publications. With the knowledge industry growing Indian languages also are trying to follow a uniform pattern or style and slowly manuals are being brought up. *Eenadu*, the premier Telugu daily, has its own manual for its writers, reporters and editors.

The styles of writing of bibliography are divided into the following categories. They are:

1. The Harward system
2. The American psychological Association System(APA)
3. The Modern Languages association System(MLA)
4. The American Medical Association System
5. The Mcgraw Hill System
6. The foot note system

Two types of formats namely American Psychological Association (APA) format and Modern Language Association (MLA) are discussed in detail in this book.

American Psychological Association (APA) Format

APA format is the official style of the American Psychological Association (APA) and is commonly used to cite sources in psychology, education, library science, and various disciplines in social sciences. APA format originated in 1929, it is published in a article in Psychological Bulletin that laid out the basic guidelines. These guidelines were eventually expended into the APA Publication Manual. The American Psychological Association reference style uses the Author-Date format. When quoting directly or indirectly from a source, the source must be acknowledged in the text by author name and year of publication. If quoting directly, a location reference such as page numbers(s) or paragraph number is also required.

Sample entries for various sources are given below.

In an entry for a book in an APA style works cited list, the date (in parantheses) immediately follows the name of the author (whose first name is written only as an initial), just the first word of the title is capitalized, and the publishers full name is generally provided. In an APA style, the titles of books and journals are italicized.

**Examples**

**Book(one author)**

Mittal, R. L. (1993). *Library administration.* Newdelhi: Metropolital book pvt ltd.

Brown, J. (2009). *101 Ways to power-up your writing*. Washington D.C: Superior Books.

Mckibben, B. (1992).*The age of missing information*.  Newyork: Random House.

Marcause, S. (1975). *A survey of musical instruments*. Newyork: Harper& Row.

**Two authors**

Springer, S. P. & Deutsch, G. (1985). *Left brain, right brain* (Rev. ed.). New York: W. H. Freeman

Brand, M. & Harnish, R. M. (Eds.). (1986). *The representation of knowledge and belief.* Tucson, AZ: University of Arizona Press.

Brown, Pat J. & Adeel, G. (2009). *Educational psychology for learning and teaching*.  Washington D.C: Superior Books.

**Book with three authors**

Brown, Pat J., Adeel Gupta & Jimmy Smith. (2009). *101 Ways to Power-Up Your Writing*. Washington D.C: Superior Books.

**More than three authors**

Felix, et al. (1949).*Librarianshi**p**.* London: Trafton pvt ltd.

**Book(no author/editor)**

*Professional guide to diseases*. (1882). Springe house: Internet communications.

**Edited book(editor in place of author**)

Inness, S.A. (Ed.). (1998). *The psychological disorders: Twentieth-century American girls cultures*. Newyork: Newyork university press.

**Edited book, multiple authors (editor in place of authors)**

Moriarty, L.J., & Carter, D.L.(Eds.). (1998). *Criminal justice technology in the 21$^{st}$ century*.Springfield: Charles C. Thomas.

**Article in a Journal (single author)**

Bennet, T. (1999).Professional  nursing in Brazil. *International Nursing Review,* 43, 81-94.

Loftus, E. F. (1993). The reality of repressed memories. *American Psychologist, 48,* 518-537.

Brown, Pat J. (2009). 101 Ways to Power-Up Your Writing. *Writing Journal*. 17(3), 23-67.

**Article in a Journal (two author)**

Kilmoski, R., &Palmer,S. (1993). The ADA and the hiring process in organizations. *Consulting psychology journal*: Practice and Research, 45(2), 10-36.

Brown, Pat J. & Adeel Gupta. (2009). 101 Ways to Power-Up Your Writing. *Writing Journal*. 17(3), 23-67.

Hubel, D. H. & Wiesel, T. N. (1979). Brain mechanisms of vision. *Scientific American, 241*(3), 150-164.

**Article in a Journal (three author)**

Milner, B., Corkin, S., & Teuber, H.L. (1968). Further analysis of the hippocampal syndrome: 14-year follow-up study of H. M. *Neuropsychologia, 6,* 215-234.

Brown, J., Adeel Gupta & Jimmy Smith. (2009). 101 Ways to Power-Up Your Writing. *Writing Journal*. 17(3), 23-67.

**More than three authors**

Brown, J. et al. (1949). 101 Ways to Power-Up Your Writing. *Writing Journal*. 17(3), 23-67

**Article in Newspaper**

Von Drehle,D. (2000, January 15). Russians unveil new security plan. *The Washington post,* pp.13,14.

**Article in Magazine**

Brown, Pat J. (2009, February). 101 Ways to Power-Up Your Writing. *Writing Magazine*. 17(3), 23-67.

Brown, Pat J. & Adeel Gupta. (2009, January/February). 101 Ways to Power-Up Your Writing. *Writing Magazine*. 17(3), 23-67.

Brown, Pat J., Adeel Gupta & Jimmy Smith. (2009, August). 101 Ways to Power-Up Your Writing. *Writing Magazine*. 17(3), 237.

**Doctoral dissertation Abstracts in Dissertation Abstracts International**

Gould, J.B.(1999). Symbolic speech: Legal mobilization and the rise of collegiate hate speech codes.*Dissertation Abstracts International*, 60(2), 533A.

**Doctoral Dissertation available from ERIC**

Clark, J.L. (1983*). Values and academic achievement among rural Indian high school students in north Dakota.*Doctoral dissertations, university of North Dakota. (ED242469).

**Online Journal Article**

Wolak, J., Finkethor, D., Mitchell, K.J. &Yabarra, M.L. (2008).*Online predators and their victims: myths, realities and implications for preventions and treatment American psychologists*, 63 (2), 111-128. Retrieved September 2, 2009 from http://www.apa.org.

**Doctoral Dissertation from the Web**

Bartel, T.M.C. (2005). *Factors associated with attachement in International adaptation*(Doctoral disseratation,Kansas state university). Retrieved from http:// hdl. haddle.net.

**Electronic version of print book Retrieved from net library**

Vogel, C.G. (1999). *Legends of land forms: Geology of the land* [Adobe Reader Version] Retrieved from http:// www.netlibrary.com.

**Online Newspaper articles**

Parker-pope, T. (2009, August 26).Getting rid of side stitches. *The Newyork Times*. Retrieved from http:// www.Newyorktimes.com.

Modern Language Association (MLA) Format

In MLA-style entry, the authors name appears as given in the work(normally in full), every important word of the title is capitalized, the publishers name is shortened, and the publication date is placed at the end. A book title is underlined (on underlining vs italics,).

**Examples**

**Book-single author**

Marcuse, Sibyl. A survey of Musical Instruments. Newyork: Harper, 1975.

Butler, S.The Learning Styles. Chicago: university of chicago press, 1961.

Biale, david, ed. Cultures of the Jews: A New History. Newyork: Wiley, 2002.

Brown, Pat J. 2009. 101 Ways to Power-Up Your Writing. Washington D.C: Superior Books.

Bowker, Michael. Fatal Deception: The Untold story of Asbestos: Why It is Still Legal and still killing Us. N.P.: Rodale, 2003.

N.P= No place of publication indicated.

**Book with two authors or editors**

Wilson,L.R., and Butler, Pierce F. The Legal Ethical and International Environment of Business. 5th ed. Newyork: Colombia University Press, 1956.

Brown, Pat J., and Adeel Gupta. 101 Ways to Power-Up Your Writing. Washington D.C: Superior Books.

Bolman, Lee G., and Terrence E. Lending with Soul: An Uncommon Journey of Sprit. Rev.ed.Sanfrancisco: Jossey-Bass, 2001.

Cohen, Andrew, and Lorenzo Canova, eds. Rejoice 100 years of art for the Papal Jubilee. Newyork: Random, 1998.

**Book with Three authors/editors**

Palmer, R.R., Joel Colton, and Jenifer Kramer. *A History of the Modren World: To 1815.* Newyork: Health Communications, 2005.

Larsen, Mans o., Alexander  Z Spider, and Jeniffer R. Weiss, eds.  Lets Go: Germany 1998.Newyork: St. Martins, 1998.

Brown, Pat J., Adeel Gupta, and Jimmy Smith. 101 Ways to Power-Up Your Writing. Washington D.C.: Superior Books.

**Book with More than Three authors**

Nelson, Miriam E., et al. Strong Women and Men. Newyork: perigee, 2003.

Hogan, David J., et al., eds. The Holocaust Chorinicle.Newyork: International, 2000.

Pound, Richard W., et al., eds. Canadian facts and Dates. 3rd ed. Newyork:  Perigee, 2003.

**Book with no author/editor**

The Movie Book. London: Phaidon, 1999.

**Article in a Journal (single author)**

Nelson, laura Beth. "Subtle, Pervasive, harmful: Racist and Sexist Remarks in Public as Hate Speech". Journal of Social Issues 58.2 (2002): 265.

Bogomolny, Laura. "Boss your career". Canadian Business 13-16 Mar.2006: 47-49.

Brown, Pat J. "101 Ways to Power-Up Your Writing." Journal of Writing. 24.4(2009): 23-45.

**Two authors**

Brown, Pat J., and Adeel Gupta. "101 Ways to Power-Up Your Writing." Journal of Writing. 24.4(2009): 23-45.

**Three authors**

Brown, Pat J., Adeel Gupta, and Jimmy Smith. "101 Ways to Power-Up Your Writing." <u>Journal of Writing</u>. 24.4(2009): 23-45.

**More than 3 Author in journal**

Wolanski, Eric, et al. "Mud Marine snow and Coral Reefs". <u>American Scientist</u> Jan.-Feb. 2003: 44-51.

**Magazine article with ONE author**

Brown, Pat J. "101 Ways to Power-Up Your Writing." <u>Writing Magazine</u>. 23 May 2009: 23-45.

**Magazine article with TWO authors**

Brown, Pat J., and Adeel Gupta. "101 Ways to Power-Up Your Writing." <u>Writing Magazine</u>. 23 May 2009: 23-45.

**Magazine article with Three authors**

Brown, Pat J., Adeel Gupta, and Jimmy Smith. "101 Ways to Power-Up Your Writing." <u>Writing Magazine</u>. 23 May 2009: 23-45.

**Article in an Encyclopedia with an author**

Kibby, Michael W. "Dyslexia". <u>World Book Encyclopedia.</u> 2000 ed.

**Internet citation for an article in a journal**

Nielson, Laura Beth. " Subtle, Pervasive, Harmful: Racist and Sexist Remarks in Public as Hate Speech". <u>Journal of Social issues</u> 58.2(2002), 265-280.7 June 2003<http:// www. Blackwell-synergy.com/doi/abs/10.1111/1440.

Annotated Bibliography

An annotated bibliography is an organised list of sources with an accompanying paragraph that describes, explains, and/or evaluates each entry in terms of quality, authority and relevance. The purpose of annotations is to provide the reader with a summary and an evaluation of the source.

The other purposes of annotated bibliography are: a review of literature on a particular subject, illustrate the quality of research, describes other items on a topic that may be interest to the reader; and explore the subject for further research.

The annotated bibliography may be selective or comprehensive in its coverage. A selective annotated bibliography includes just those items that are best for the topic while an exhaustive annotated bibliography attempt to identify all that is available on a subject.

Writing a Review Article

A review article is a comprehensive and authoritative written presentation published in a journal, a monograph, a treatise, a book, an encyclopedia or in conference proceedings, giving an overview of the developments taken in one subject area within a certain limited period. It is written by subject specialists whose contributions are well recognised. Therefore, review article may be

- Merely a descriptive bibliography of all papers on a subject, ordered by code categories, such as experimental, theoretical, etc.

- speculative, very close to primary literature and to current controversies.

- a promoter or popularizer of some particular theory/scientist over a wider range of potentially relevant evidence than would normally be allowed in an ordinary primary paper.

- a careful compilation of experimental data, critically assessed and reduced to standard form of reference.

- an account of mathematical technique, bringing together and expounding implicit axioms, theorems, and potentially useful formulae.

- didactic meant for the beginners in the subject.

- a clear disposition of what is well known in a language intelligible to outsiders

Types

A review article can be :

- Historical

- Descriptive-giving the state-of-the-art of a subject area, trends in a specific area of R&D activity, or an overview of a broad subject field.

- Critical - It may be evaluative, expert comments, analytical

- Popular

- Bibliographic - Informative or indicative

- Review alerts - It draws the attention of readers to the developments taking place or introduction of new and emerging subject areas.

Characteristics

A review article has following characteristics:

- No original research work is reported

- Title shows that the item is a review

- Contains several references

- Title or abstract contains one of the following terms:

- Review, progress, survey, overview, advances, trends state-of-the-art

- Generally appears in serials devoted entirely to reviews or in the section of reviews in primary periodicals.

- It is indexed as reviews by secondary services.

Functions

The functions of a review article can be summarized into four groups:

- current awareness,

- tutorial,

- bibliographic, and

- general.

Uses

A review article helps the public at large to get an insight into scientific progress made on a specific topic. It promotes scientist-to-scientist communication within a subject area or an inter-disciplinary area. It aids policy makers and planners to fix national priorities and to grant financial

aid to programmes that come within the purview of national priorities. It helps R & D institutions to formulate their own policies and programmes of research. It alerts advance centres to introduce study programmes in new and upcoming areas of research.

Preparation of Review Articles

Since review articles are written by subject-specialists, careful selection of review writers assumes top priority in the preparation of reviews. A good review writer must have a strong grasp and thorough knowledge of subject, be well informed, have broad insights and perspectives, speak with authority derived from the proficiency in the field, have prestige in his own field of specialisation, and above all be a good and competent writer.

Any capable review writer carefully selects a suitable topic/theme/subject. While doing so he examines whether the subject area is too broad or too narrow as also the intended purpose of writing a review article. Having satisfied himself, he chooses the type of review article to be written. Later on he undertakes an intense literature survey bearing in mind the authenticity and correctness of references consulted. He analyses the references and selects those which have relevance to the topic chosen. He collects, collates, and organizes information and finally decides on the main and sub-divisions of the review. Then a preliminary draft is prepared giving a broad framework containing the information according to the pattern set by the writer and references at specific points to which reference applies. Then a re-assessment of the basic draft is made by addressing the following questions: Does it include a description presenting a statement or subject? Are all facts presented impartially? biased? If so, where are the distortions? Is the organisation of ideas clear, intelligible and the presentation logical and coherent? Are all important points covered and emphasized? Does it give full coverage of the topic? Are there any gaps in the presentation? Will it be credible to the reader? Will it kindle curiosity and generate discussion and debate?

After assessing the basic draft, the article is rewritten to make it more comprehensive, paying specific attention to style of presentation, grammar, and syntax. The information to be presented as tables and illustrations is eliminated from the body. Tables and figures are carefully planned and prepared.

A second draft is prepared in the standard format, incorporating references to tables, figures and citations at the appropriate places in the text. This draft is once again critically re-examined and appropriate changes are made. The article is finalised keeping in view the style of presentation recommended by a journal to which the article is to be sent for publication. Four copies of the article are prepared, three to be sent to the editor of the journal and one to be retained. The final draft is also stored in a standard size of a floppy disk to be used in computer-based publications.

## Review Paper

Book Review

A book review is a form of literary criticism in which a book is analysed based on content, style, and merit. A book review can be a primary source opinion piece, summary review or scholarly review.

## Preparing Abstract and Indexes for Teacher Education Resources

RETRIEVAL TECHNIQUES AND APPROACHES

Internet is network of network. Internet is a series of linked networks, which operates on the basis of standard network protocols. Tools used for, searching the Internet often operate in client/server mode-Server software which enables the user to search the database in a more intuitive way has been set up on many computers on the Internet.

A collection of home pages located on the same server is called a Web site. Access to these pages is via the uniform Resource Locator (URL) using a browser.  The World Wide Web is an important component of the Internet and services and resources available over the Internet include; listservs and discussion groups, subject databases, community information, government resources, library catalogues, bulletin boards, document delivery and commercial transactions and others.

A vast array of resources and databases are available through the Internet. It is necessary to design interfaces that help users search the information resources and services available on the Internet. This is because retrieval is recognised to be a complex and significant problem on the Internet.  Two types of tools, browsers (subject directories) and search engines are used to search the Internet. The browsers support browsing and moving between sites and pages on the basis of hyperlinks, but the identification of specific resources requires a search engine.

Search Engines

The internet is often referred as the information superhighway.  As there are number of websites in the Net, searching every site by its URL is very difficult. Therefore, software have been developed to prepare indexes to the internet content. These indexes are called search engines. Every web search sites uses a search engine. Search engines can differ dramatically in the way they find and index the material on the web, and the way they search the indexes from the user's query.

A search engine is a searchable database of Internet files collected by a computer program (called wanderer, crawler, robot, worm, or spider).Indexing is created from the collected files, e.g., keyword in titles, title, full text, abstract, URL, or metadata. There are no selection criteria for the collection of files, though evaluation can be applied to ranking schemes that return the results of the query. A search engine might well be called a search engine service or a search service. It consists of three components: Spider, Index and Search and retrieval mechanism.

Spider: It is a program that traverses the Web from link to link, identifying and reading pages. Spiders are also known as web wanderers, web crawlers or robots. They send back indexing information to the search engine.

Index: it is a database containing searchable information about Web page gathered by the spider.

Search and retrieval Mechanism: it is a technology that enables users to query the index and that returns results in a schematic order.

Types of Search Engine

There are three major types of general search engines. They are Free Text search engine, Directory type search engine and Meta search engine. In addition to general search engines, there are also subject specific search engines, directories, subject gateways and information portals.

i. *Free Text Search Engine*

Alta Vista (www.altavista.com) is the first search engine to index every word on the page and provide a retrieval system to extract relevant information. Developed by Digital's Research Labs in Palo Alto and launched in December 1995, it is available in more than 25 languages in a variety of versions. Being a free text search engine you can type any word or phrase. If you type a number one after another, Alta Vista will automatically connect them using the Boolean Operator OR. This will lead to large number of his. The hits are ranked on the basis of criteria adopted by the search engine and the best hits are listed first and the less relevant ones are listed afterwards.

One of the fastest search engines emerged to prominence these days is Google (www.google.com). In Google, it is possible to made free text searching as well as directory based searching.

ii. Directory Type Search Engine

Yahoo is the first search site on the Web to gain worldwide attention. It differs from other sites, because its indexes are created manually, instead of sending out automated spiders that roam the Web and index everything in the sight. Once the search topic is decided, the user can determine the category under which a search can be conducted. As a result, Yahoo belongs to a category called a "directory", rather than just a search engine.

iii. Meta search Engine

A meta search engine searches multiple individual search engines simultaneously. It is not a search engine by itself. It accepts queries and passes them on to selected group of search engines. Once the results start coming in from these individual search engines, a meta search engine display the results on the screen. The search engine will collate and display the results eliminating duplications. Obviously there could be some duplication as the index of various search engines overlap. Multi search engines are useful if you want to search very exhaustively on any topic. An expert search engine is a specialised form of meta search engine. These engines will accept natural language queries. For examples **how do I make plum cake** in the text box and press the '**Ask**' button. The search engine will understand your query and display all possible links where the required information can be found.

Information Retrieval techniques

Information retrieval is a generic term, which refers to retrieval of documents or sources and data or facts. Information is a vital importance for scientific development of an individual, organization, state, or country. Although lots of information is published every day and the information explosion lead to create the search process more complex among the users. Many search engines by default offer a keyword search, but this kind of search will find all pages that contain any of the words specified. Moreover, the search will find the words in any order and in any location. It is important to have a clear idea of the various retrieval techniques to widen or narrow the search results effectively.

Information retrieval is the activity of obtaining information resources relevant to an information need from a collection of information resources. Searches can be based on meta data or on full text (or other content based) indexing.

Information retrieval can be accomplished by taking the searching approach, the browsing approach, or the two approached combined. The selection of an appropriate retrieval approach depends on, among other factors, what kind of information need a particular user has.

Searching

Searching is the retrieval approach that has long been in use. Information retrieval is phrased as database searching, online searching, web searching, or the like. Searching can be conducted either via subject or non subject access points. Typical subject access point in Information Retrieval include descriptors, identifiers, classification labels, subject headings, cited references in citation searching, and terms from titles, abstracts, or the text itself in full-text searching. Common non-subjects access points encompass language, publication year, document type, and the like.

Searching can be an effective retrieval method when the query is specific and the user knows explicitly what to look for. In the searching approach, retrieval techniques such as Boolean logic allow the user to combine different facets in a search query wherever needed. It is a standard activity; however there is little chance for serendipity – that is to discover something unexpectedly during a search – as the system only presents results that match the query.

Boolean Search

Boolean operators, also known as logical operators, are used to separate keywords to construct more complex searches. They help to make a search more accurate. The Boolean logic consists of three operators: 'AND', 'OR' and 'NOT'. The operator 'AND' used to find documents containing all of the specified words in the search strategy. However, this type of search normally retrieves fewer results than if it is searched for one of the terms on its own. The 'OR' operator retrieves all works that contain any or the entire search terms it separates. This type of search retrieves more results than if one of the terms searched for on its own. The 'NOT' operator retrieves all works that contain the first search term but not the second. In searching, 'NOT' is used to get rid of unwanted concepts. Each of these operators can be explained by the following illustrations.

Most of the computer-based IR Systems allow search formulations with Boolean operators AND, OR, and NOT. With the aid of these operators it is possible to specify complex search requirements.

For example, consider the expression: Basic Concepts and Contours of Computer-based Information Systems (PULSES OR CHICPEA* OR ARIETTNUM) AND (DROUGHT* OR WATER STRESS)

The above search expression would retrieve information on drought, drought tolerance, drought stress or water stress in pulses, information on pulses in general or in chickpeas. The search software uses the Boolean expression to retrieve all references which satisfy the given expression. Thus, it may be noted that the capability of the search software to combine subject parameters with non-subject parameters, and the possibility of term truncation and free-text searching in different fields of the document file, and the representation of search formulation as a Boolean expression enables the performance of complex searches in large databases.

Truncation

Truncation is used to permit variation in words length or spelling. Truncation allows search for variant spelling and expansion of word stem using any one of the key board symbols such as *, ? and #. The symbols may be placed at the beginning or at the end of the word. There are three types of truncation searches such as: Open Type, Restricted Type and Internal Type.

For example, a search by the word stem compu* (the indicates truncation) will retrieve information on computer, computers, computational, computability, etc. Some search software permit only right truncation while others permit both left and right truncation. Truncation facility may be used in any search parameters.

Ex. Open type – EMPLOY?; Internal Type – WOM?N; and Restricted Type – COMPU??

Proximity Search

Proximity search means search for two or more words that occur within a specified number of words of each other in the databases. Just as an approximation of words to retrieve the required information. The proximity operators are WITH, NEAR, ADJ, or ADJACENT and a number (to specify the number of words). The proximity operator is placed between the words that are to be searched.

Query Representation

Any information need must be expressed verbally or in writing before a search can be performed to satisfy it. The expressed information need is called a search request or retrieval question, usually in natural language. The search request can then be transformed into a query using Information Retrieval system's facilities such as query syntax, retrieval techniques, and controlled vocabulary is one is adopted. That transformation process is labelled as query representation – the most critical factor in retrieval (Sparck Jones, 2000).

General Steps in Query Representation

Query representation is an intellectual exercise that typically consists of the following steps:

1. Conduct a concept analysis of the search request by decomposing it into concept groups or facets.
2. Find out the synonyms, broader terms, and narrower terms of the concepts identified.
3. Translate these terms into controlled vocabulary.
4. Use Boolean logic to OR all the synonyms terms in every concept group, AND relevant facets, and then NOT out unwanted facet(s).
5. Apply other retrieval techniques where needed.

There may be some variations in practice, while framing query representation for retrieving relevant documents. Although there are five steps to frame query representation, the actual practice may not consist of same number of steps and follow the same order. Since each user, search request, and Information Retrieval systems are different, query representation should reflect this phenomenon by taking into consideration the uniqueness of the process.

Difficulties with Query Representation

Query representation, as discussed, is not a mechanical but an intellectual process, which requires thinking and judgement. In addition, there exist several difficulties in this intellectual exercise.

1. Concept analysis constitutes the first difficulty in query representation. The reader should have right knowledge, experience, and skills to identify and express the concepts contained in a search request.
2. The second difficulty in query representation in the language.
3. Applying right retrieval techniques presents another difficulty in query representation.

Browsing

Browsing is seeking and selecting information by skimming, scanning, and other similar activities. In information retrieval, people like to browse:

- For getting information when a topic is not clearly defined;
- For finding information that is hard to be specified explicitly;
- For obtaining an overview of the information to information retrieval system offer;
- For choosing right information among a mixture of relevant and irrelevant items; and
- For discovering and learning new information.

Any web searching process should involve browsing activities in some way. It is essential to understand browsing strategies adopted by the users in order to design for web searching.

Types of Browsing

Browsing Strategies

Library Network

Library Automation

"Library automation, stated in single term, is the application of computers and utilization of computer based product and services in the performance of different library operations and functions in provision of various services and production of output products" (Singh, 2010).

Library automation is the use of automation and semiautomatic data processing machines to perform such traditional library activities as acquisition, cataloguing, and circulation. Although these activities are not necessarily performed in traditional ways, the activities themselves are those traditionally associated with libraries; library automation may thus be distinguished from related fields such as information retrieval, automatic indexing and abstracting, and automatic textual analysis.

Library automation refers to use of computers, associated peripheral media such as magnetic tapes, disks, optical media, RFID technology, bar code, and utilization of computer based products and services in the performance of all type of library functions and operations. Computers are capable of introducing a great degree of automation in operations, functions since they are electronic, programmable and are capable to control over the processes being performed.

The utilization of computer and related techniques make the provision to provide the right information to the right reader at the right time in a right form in a right personal way. Automation of Library activities provides the library services very efficiently, rapidly, effectively, adequately and economically. The modern libraries and information centers facilitate free communication because access to information has become a fundamental right of clientele. (Bhardwaj and Shukla, 2000).

Automation enables libraries to provide an effective service while saving the employee time by transferring low-level, repetitive operations to a machine. Library automation systems have been developed for library in-house operations such as acquisition, cataloguing, circulation, serials control, theses and dissertation processing and reference services such as selective dissemination of information and interlibrary loans.

Objectives of Library Automation

The major objective of any automated system is to speed up, avoid duplication and repetitive works, which in turn helps to improve the services offered by the system. The objectives of Library Automation are:

1. To maintain bibliographical records of all the materials, in a computerised form.
2. To provide bibliographical details through a single enumerative access point of holdings of a library.
3. To reduce the repetition in the technical processes of housekeeping operations.
4. To provide access to information at a faster rate.
5. To share the resources through library networking and
6. To implement new IT processes to provide high quality information.

**Need for Library Automation**

There are several reasons for computerizing library activities. A machine readable record, prepared at the time of acquisition may be used repetitively for several purposes. Thus a

considerable saving in effort, time and resources involved in manual processing can be achieved. The other reasons for computerizing library activities are:

1. To improve control over the collection.
2. To have an effective control over the entire operation.
3. To improve the existing services.
4. To share effectively the resources among various libraries in a region.
5. To avoid duplication of work.
6. To use the services of the existing staff effectively.
7. To satisfy the users and
8. To economics expenditure for library activities (Rao, 1996)

**Advantages of Library Automation**

- Many activities of a library are routine in nature; a few are repetitive. Automation of these activities helps in managing the library's resources in a better way at the same time saving time, money and manpower.

- Other important factors associated with automation are speed, and accuracy.

- Automation also offers freedom from doing repetitive and routine works as well as enables providing efficient services properly and more efficiently cutting down time and improving productivity.

-  Automation also facilitates generation of a number of reports for better decision making in the effective management of the library.

- Circulation data can provide information on titles that are in great demand so that more copies can be procured if needed.

- Many current awareness services like current additions, contents of books and journals, etc can also be provided to users. (Moorthy, 2004)

**Steps in Library Automation**

Since automation of a library is an important and essential step, it should be properly planned and implemented. Hence, while considering library automation a series of steps have to be undertaken as follows:

1. Feasibility Study of the System
2. Identification of Hardware
3. Identification of Software
4. Budget
5. Training
6. Implementing Library Automation

**Areas of Library Automation in Academic Libraries**

Library automation is generic term used to denote the various activities related with the location, acquisition, storage, update, manipulation, processing, repackaging or reproducing,

dissemination or communication, improving the quality of products and services of library and information centers. The major areas of library automation are given below.

1. Information Resource Building
2. Data Entry
3. Classifications and Cataloguing
4. Circulation Control
5. Serial Control
6. Documentation and Allied Services
7. Information Retrieval

**Information Resource Building**

Acquisition of books, monographs, audio-visual, electronic materials such as CD-ROM, maps and so on. There are some specific functions of an acquisition process. Suggestions, recommendations and selection of library collections:

- Duplication of checking, library holding checking.
- A vendor selection.
- Preparation of order, cancellations of order lists with terms and conditions of the supply
- Checking of overdue orders.
- Record of items on order.
- Record of received and non-received items and receipt to the vendor.
- Items verification with order file and invoice.
- Inspection of items by the concerned department.
- Prepare for payment after accessioning.
- Prepare budget and maintain accounts and statistics subject wise etc.
- Final report items, subject wise, chronologically, booksellers report etc.

**Data Entry**

Database is required for each

- Books
- Members/clients
- Serials
- Audio-visual materials
- CD-ROMs
- Floppies
- Gifted Items
- Question Bank

- Maps and
- Reports

## Classifications and Cataloguing

Classifications and cataloguing consists of

- Catalogue card production
- On-line cataloguing
- Duplication checking of catalogue cards
- Production of duplicate catalogue cards.
- Preparation of authority file subject heading list.
- Shorting, checking and filing of catalogue cards.
- Automatic generation of added entries.
- Generation of monthly added list.
- Developing centralized and on-line cataloguing.

## Circulation Control

Modules for the circulation control are:

- Registration and frequent updating of membership.
- Issue, return, renews of reservation of documents and produce slip for proof.
- Charges for late, lost book, binding and production of penalty slip.
- Maintenance of circulation and prepare statistics.
- Inter library loan.
- Use of bar code system
- Report statistics of circulation.

## Serial Control

The module for the serial control consists of

- Input essential serials data.
- Order list of new serials.
- Mode of payment, prepare for payment.
- Receipt and updating the records.
- Receipt to vendors or publishers.
- Preparing the list of present holding, additions, missing, canceled serials chronologically and subject-wise.
- Renewal and cancellation of resent subscriptions.
- Sending reminders and follow-up of missing issues.

- Binding control.

- Accession register of bound serials.

- Prepare budget and maintain accounts statistics such as subject wise and binding etc.

## Documentation and Allied Services

Documentation and allied services includes

- Indexing and abstracting of micro and macro documents.

- Thesaurus construction.

- Compilation of union catalogue.

- Bibliographic control.

- Current awareness services.

- Literature search.

- Selective dissemination of information

- Newspaper clippings.

## Information Retrieval

Information retrieval consists of

- Database creation and maintenance, interactive searching, saving of in house as well as external databases.

- Search and print outs of queries against specified requirement such as books issued, reserved, lost, overdue and weed-out.

- Keyword searching, subject-wise, title, accession number wise, title, author, call number and so on.

## Automated Library Services

- Information services are provided to assist people and enable them in solving their problems and decision making. Modern libraries and information providing a variety of documentation and information services to support research and development, marketing and trade, management and all other programmes related to the development of institution.

Mahapatra (1985) has given the following automated services are:

1. Current awareness Service (CAS)
2. Online Search Service
3. Printed Indexes
4. Selective Dissemination of Information (SDI)
5. Inter Library Loan
6. Stock Verification
7. Reference service

Digital Library

Information technology has changed the complexion of today's libraries. Libraries have evolved to become information provider rather than mere document providers. The shift from traditional libraries to the digital is not merely a technological evolution, but requires a change in the paradigm by which users access and interact with information. This move from traditional to electronic library also alters the fundamental role of library.

Definitions

A simple definition of a digital library is 'a library consisting of digital materials and services'. Digital materials are items that are stored, processed and transferred via digital (binary) devices and network. Digital library services are information services that are delivered digitally over computer networks. In simple term, "digital library basically stores information mainly in electronic format to disseminate broader user communities".

A digital library can be described as 'Library without walls', library without books or synonymous terms such as 'electronic library' or 'Virtual Library'. A digital library is a logical assemblage of distributed databases across the globe. According to the Association of Research Libraries, a digital library has the following common elements:

- The digital library is not a single entity.
- The digital library requires networking technology to connect many entities.
- All linkages are transparent to end-users.
- Universal access to digital content and information is a goal.
- Digital library collections are not limited to document surrogates, but can include digital artefacts not extant in traditional form.

Digital library is a repository of digital documents and a setoff programs that manage the digital documents. According to Ian Witten *et.al.* Digital Library is "a collection of digital objects, including text, video and audio, along with methods for access and retrieval, and for selection, organization and maintenance of the collection." The full-fledged digital library is one in which all the information is available in the digital forms. In simple term, digital library basically stores information mainly in electronic format to disseminate broader user communities.

Need for a Digital Library

1. To keep pace with changing environment of technological innovations.
2. To save valuable shelf space.
3. T preserves the valuable and rare information.
4. To increase the efficiency and effectiveness of library by providing better accessibility of their resources round the clock, beyond the wall and on user desktop.
5. To enable faster services and to provide multi user access.

Characteristics of Digital Library

The three important features which characterize digital libraries are:

1. Documents  - Digital library collection contain fixed, permanent documents.
2. Technology – Digital libraries are based on technology and
3. Work – Digital libraries are to be used big individuals working alone.

Components
Major components of digital library are:

1. Geographically distributed digital information collection.
2. Geographically distributed user.
3. Information represented by variety of digital objects.
4. Large and diverse collections
5. Seamless access.

Functions of Digital Library
The main functions of digital library are:

1. Conversation of print to digital and acquisition of digital media.
2. Storing of digital resources in appropriate repository in a networked environment for lasting in interest.
3. Creating a single user interface and gateway for the digital resources
4. Patron access through a browser or dedicated client.

The emergence of digital libraries has influenced the library services. Application and modification of new techniques enabled the academic libraries to meet the information explosion and retrieval.

Advantage of Digital Library
1. Digital libraries can be accessed at anytime, anywhere.
2. The same resources can be used at the same time by a number of users.
3. They provide fast access, and the libraries do not have the problems of misplaced or missing books.
4. The ability to search provides an enormous advantage to electronic materials.
5. Digital information needs very little physical space to contain them.

Disadvantage of Digital Library

1. High initial investment for infrastructure.
2. Skilled person is required to handle for achieving best digitization results.
3. High-speed network is required to down load full text document.
4. Reading form paper is still more flexible and easier.
5. Copyright restriction in digitization.

Digital library is the product of the advancement of science and technology. It is very much essential for the modern world. Moreover it obeys the fourth law of library science "save the time of the readers".

**Electronic Library**

Electronic library is a combination of electronic resources, infrastructure and associated services.  It is a service that is generally now provided alongside traditional, physical library services.

The electronic library, which can also be referred to as the "digital library", the "networked library"  is often defined as the collection or repository of electronic resources and the technology needed to provide access to it.  Electronic libraries include the services such as searching, categorisation, filtering, translation, publishing, help in finding information, user education, e-mail enquiry services and managing copy right, and electronic redistribution.

**Definition:**
Electronic Library is a library consisting of Electronic materials and services.  Electronic materials can include all digital materials, as well as a variety of analog formats that require electricity to use.  The 'electronic library' encompasses all the material that can be held by a "digital library" and is therefore more inclusive.

Electronic library is a library that has information in electronic format viz.CD-ROM, hard disks, optical disks, online etc. which provides information over cables and telecommunication lines.

## Function

In the words of Brophy, Electronic libraries being more than just an "agglomeration of data sets". He mainly concentrates on academic libraries. He states that just as traditional libraries are more than just a collection of books, electronic libraries also have a other dimension. He lists the functions of electronic library as

- access negotiation

- resource capture storage and access

- advisory services

- resource discovery

- resource utilization

- infrastructure provision

- Resource preservation.

Although these functions are also part of the traditional library in the E-library they take on new levels of complexity.

## Services

The electronic library is now the part of library services in all sectors of the library industry- academic, special, public and school services.

When evaluating electronic libraries, it is important to take these service aspects into account. It is also important to considered electronic libraries in the context of "hybrid library" services. This means that the electronic resources and services are usually being provided by a library that is also providing traditional, physical resources and services.

The other aspect of the E-library is to clarity in the context of performance evaluation, is that the electronic library collection is made up of a number of individual electronic resources that can also be evaluated. The evaluation of individual electronic titles is important for the purposes of collection development.

Libraries are important treasure houses of knowledge for preservation and act as information resource centres both for the individuals and the community alike. Libraries will continue to be the meeting and learning places to play important social, cultural, technical roles in future.

## Virtual Library

Digital Libraries and virtual libraries are not one and the same. All virtual libraries must, by their very nature be electronic, but not all electronic libraries are necessarily being virtual. A library with all holdings on CD-ROMS accessed from stand alone work stations would be electronic, but it certainly would not be classes as a virtual library.

A library that does not physically exist, most often used to denote a library distributed collections or services that appear and act as one. Typical example is a website with pointers and link to other sides. The first virtual university is established in Tamilnadu at Chennai in the name of '*Tamil Virtual Uinversity*'.

A virtual Library may be defined as the on line facility provided by a conventional library to read books and access other facilities or it may mean a website which offers links to various sites with a large store of information in a catalogue or achieved form.

Almost all the services offered in traditional and digital library environment are also served in virtual library.

Characteristics of Virtual Library

The key characteristics of a true virtual library are:

1. There is no corresponding physical collection.
2. Documents will be available in electronic format
3. Documents are not stored in any one location
4. Documents can be accessed from any work station.
5. Documents are easily and quickly retrieved and delivered as and when required
6. Effective search and browse facilities are available.

Requirement for Virtual Library

The boost in the use of telecommunication and computer application in the various activities in gathering information, the concept of virtual library is gaining significance.

There is a great need for visualizing well planned long term strategies for introducing and implementing the application of information technology in library activities keeping in mind the local and national requirements in information transfer. Careful planning and team work is essential for the organization of virtual library. The following factors are to be taken care of:

- Finance
- Library Collection
- Information Service
- Type of Users
- Hardware and Software

The replacement and upgradation of systems should be an important issue which should be enlisted at prominent place through the planning and implementation process.

Advantages of virtual library

1. Time saving
2. With the help of news services it's easy to get the specific information.
3. Virtual libraries facilitate individual, independent and informal learning.
4. The user can access to get information from where ever they are free
5. The user can access freely without any charges.
6. They not only the bibliographic information, but the full original text.

Disadvantage of virtual library

1. Traditional libraries are meeting places of teachers and researchers supporting formal, interdependent, collaborative learning and research.
2. To exploit these resources effectively the user need training which is not provided to the end users as yet.
3. Lack of experts.

Difference between Digital Library, Electronic and Virtual Library

Electronic library is a library that has information in electronic format viz.CD-ROM, hard disks, optical disks, online etc. which provides the desired information over cables and telecommunications line. Digital library is differing from Electronic library in the sense that it is a

group of mutually connected servers and workstations. Which are connected through high speed networks. Virtual library is a library without walls, globally extended, yet the user is able to retrieve the information needed by him. But in recent day the current use of the word '*Digital Library*' denotes both electronic and virtual library.

**Information Network**

The Oxford English Dictionary states that a network is "an interconnected chain or system of things", On the other hand the National Commission on Libraries and Information Science (NCLIS), U.S.A. defines network as two or more libraries and/or other organisations engaged in a common pattern of information exchange, through communications, for some functional purpose. A network usually consists of formal agreement whereby materials, information and services provided by a variety of types of libraries and/or other organisations are made available to all potential users. Libraries may be in different jurisdictions but agree to serve one another on the same basis as each serves its own constituents. Computers and telecommunications may be among the tools used for facilitating communications among them" (ALA Year Book, 1976. p.248).

"Information Network' as "a set of interrelated information systems associated with institutional arrangements, in order to jointly implement information handling operation, with a view to pooling their resources and to offer better services to uses.

In the light of the definitions cited above Library and Information Networking is the area with a direct impact on information services, their efficiency and effectiveness. Definition of Library Networks is usually emphasis different levels of cooperation among libraries or other participating organisations in the network. The range of services provided by many resource sharing networks include storage and retrieval of data such as factual, physical and bibliographic data, document ordering and delivery services, general computer and support of group communication and decision making. The most widely used networks can be described by four major types of services. They are:

- shared cataloguing;

- on-line reference;

- shared circulation;

- Interlibrary loan.

Library Networks

Library-networking is the use of computer-networking to support all forms of communication between libraries, and their users and between libraries and libraries. On the other hand, information networking is concerned with end-user communication and access to networked information services not in any way mediated by the library. It is information dissemination and gathering activity enabled solely by the presence of the network.

Information networking is not a new activity. The exchange and interchange of information between individuals and peer groups is a common feature of the human condition. Computer - supported information networking places this activity in an entirely new context and requires understanding of issues in the development of computer mediated communications.

Resource sharing in libraries is defined as a mode of operation where by functions are shared in common by a number of libraries in its most positive effects. Resource sharing entails reciprocity, employing partnership in which each member has something useful to contribute to others and in which every member is willing and able to make available when needed. The term resource is used to designate any or all of the materials, functions, services and the expertise of the professional and non-professional staff. Resource implies a thing, a person or an action to which one turns for aid and help in time of need.

Library resources encompass print and non-print materials as well as human resources that are eligible to be shared in ways that enhance the quality of service." From the foregoing explanation of Kent, it must be easy for anyone to understand the meaning and significance of `Resource Sharing'. Obviously it does not mean that individual identity of participating libraries would be affected in any way. In fact, the gains of resource sharing are to be obtained without in any way adversely affecting the objectives or interests of the participating libraries. However, some minor adjustments may have to he made in exceptional situations, with regard to the operational methods.

## ERNET (Education and Research Network)

ERNET is a project of Department of Electronics (DoE), Government of India, assisted by the United Nation Development Programme (UNDP). This project started in 1986 with nodal centers at the Department of Electronics (in Delhi), 5 IITs (except Guwahati), IISc and National Center for Software technology (NCST inMumbai). ERNET is intended for the use by academic and Research & Development organizations. The network structure is based on multi-network internet concept. This network adopts a satellite channel as the medium. Over 200 academic and R & D groups exchange electronic mail with each other using ERNET. Over 8000 Scientists and Technologists have access to ERNET facilities. International access is provided using a leased line from NSCT, Mumbai to USA. ERNET provides the whole range of internet services. The approach of ERNET is normally similar to the one followed in advanced countries of leasing terrestrial circuits and making use of the National Public Data network.

Objectives of ERNET

Objectives of ERNET are:

1. to enhance national capabilities in the area of design, development, Research, Education and Training on state of art concept of computer networking and related emerging technologies.
2. to set up a nationwide network for academic and research community of the country.
3. To provide massive training programme to generate efficient manpower needed by industry and users in the field.

Facilities and Services

The main emphasis is given by this network to the community related research and development, establishment of other networks, and the functions for creating interactive cooperation. For providing these functions, the following facilities are provided by ERNET network to the users of the country.

1. Joint Product development
2. Technology Transfer
3. Consultancy Services
4. Education and training facilities

Its services include electronic mail, file transfer, news, remote log on, bibliographic database access, conferencing, bulletin board and directory services.

## DELNET (Developing Library Network)

DELNET stands for Developing Library Network (formerly Delhi Library Network). It is the first operational library network in India. It was started as a project of the India International Centre in January 1988 with the initial, financial and technical assistance by National Information System for Science and Technology (NISSAT), Department of Scientific and Industrial Research, Govt. of India. It was registered as a society in June 1992 under the Societies Registration Act of 1860 and is currently

being promoted by the National Informatics Centre (NIC), Planning Commission, Govt. of India and India International Centre, New Delhi.

**Objectives:**

The main objectives of DELNET are -

1. To promote sharing of resources among the libraries by developing a network of libraries, by collecting, storing and disseminating information and by offering computerized services to the users.
2. To offer guidance to the member libraries on cataloguing database services, circulation, acquisition, serials control, online services, selection of hardware and software, etc.
3. To coordinate efforts for suitable collection development and for reducing unnecessary duplication wherever possible.
4. To establish a referral centre, to monitor and/or facilitate catalogue search and maintain a central online union catalogue of books, serials, and non-book materials of all the participating libraries.
5. To facilitate and promote delivery of documents manually and mechanically.
6. To develop specialist bibliographic database of books, serials and non-book materials.
7. To develop a database of projects, specialists and institutions.
8. To possess and maintain electronic and mechanical equipment for the fast communication of information and delivery of electronic mail.
9. To coordinate with other regional, national and international networks for exchange of information and documents.
10. To undertake, facilitate and provide for the publication of newsletters/journals devoted to networking and sharing of resources.

**Functions and Activities:** The main functions and activities of DELNET are –

- Resource Sharing
- Online databases
- Document Delivery Services
- Development of Software
- Standardization
- Seminar, Conferences, Workshop and training
- Publication of newsletter and NACLIN proceedings
- Mailing lists and Forum

## INFLIBNET (Information Library Network)

Information Library Network (INFLIBNET) programme of UGC was initiated at Ahmedabad in 1991. The programme aims at the establishment of a national network of library and information centres in Universities, colleges, institutions of higher learning and Research and Development institutions in India. As part of its development plan, INFLIBNET provided financial assistance to a large number of university libraries to modernise their operations using computer technology.

## Objectives of INFLIBNET

The main objectives INFLIENET are as under:

1. To evolve a national network of libraries and information centres in the country and to improve information handling capability;
2. To provide reliable access to document collection through online union catalogue;

3. To provide better access to bibliographic information sources with citation and abstracts through online accessing of international databases held by international information networks and centres;
4. To provide document services by establishing resource centres around libraries having a rich collection of documents;
5. To promote information resource utilisation through shared cataloguing inter- library loan service;
6. To computerise operations of libraries and information centres in the country following a uniform standard;
7. To facilitate communication among scientists, engineers, researchers social-scientists, academics, faculties, and students through electronic-mail,
8. To enable users regarding of location and distance to access information;
9. To create online information service and
10. To encourage cooperation among libraries.

## Services Offered

Its function/services are:

1. Catalogue-based Service: including shared cataloguing, union cataloguing, on-line cataloguing access and catalogue production in card/book, magnetic tape and CD-ROM.
2. Database service: Bibliographic database services, retrospective searches, SDI, CAS and non-bibliographic information such as ongoing and completed projects, institutions and experts.
3. Document Supply service: including inter –library loan and document delivery through fax and non-fax.
4. Communication based Services: including referral service. Electronic mail for transfer and receipt of messages, bulletin board for viewing and updating. Academic communications through Electronic mail, bulletin board, file transfer computer/audio/video conferencing.

## Documentation Centre

The main objective of modern library and information centers is the dissemination of information to the specialised users, documentation and information center were established initially as the extension of special libraries.

Documentation centers are the specialised centers, other than the libraries. They generally deal with the specialised types of users, such as researchers, scientists, etc. Their information need is more specific compared to other types of users. Documentation centers are those centers which acquire, store, retrieve and disseminate information as per the request of the user. They were involved in various activities (services) such as indexing, abstracting, translation, reprography, etc. Examples of documentation centers are : INSDOC is functioning under CSIR, NASSDOC is functioning under ICSSR, and NISSAT (National Information System for Science and Technology), is functioning under Ministry of Science and Technology.

Due to exponential growth of literature and information especially in the field of science and technology, the users such as researchers, scientists and other scholars face many problems while searching relevant information. Their information need is complex, they need readymade or tailor made information.

Documentation centers generally scan the current literature, process it, store it, and disseminate the information to the users. These centers provide specialised type of services such as SDI, CAS, translation, literature search, compilation of bibliography etc.

NASSDOC (National Social Science Documentation Centre)

NASSDOC is an India's Leading Information Centre for Research and Innovations in Social Sciences. It was established in 1970 as a Division of ICSSR with the objective to provide library and information support services to researchers in social sciences; those working in academic institutions, autonomous research organisations, policy making, planning and research units of government departments, business and industry, etc. NASSDOC provides guidance to libraries of ICSSR Regional Centres and ICSSR maintained Research Institutes. To cater to the information needs of social scientists,

NASSDOC offers many services. These include the following

1.  Library and Reference Service.
2.  Collection of unpublished doctoral dissertations, research project reports, current and old volumes of selected social science journals of Indian and foreign origin.
3.  Literature Search Service from printed and digital databases, i.e CD-ROMS, floppies, online database, etc.
4.  Compilation of short bibliographies on request.
5.  Study grants are made available to doctoral students for collection of research material from various libraries located in different parts of India.
6.  Financial assistance is provided for taking up bibliographical and documentation projects.
7.  Published bibliographies, directories, reference sources in social sciences are acquired in bulk for distribution among institutions and libraries.
8.  Document Delivery Service is provided by procuring books and journals on Inter-library loan or by photocopying the documents.
9.  Short-term training courses are organized for the research scholars, social scientists, librarians and IT professionals to acquaint them with the latest information and communication technology; and
10. Cyber Cafe, to facilitate access to internet resources on social sciences.

INSDOC (Indian National Scientific Documentation Centre)

Indian National Scientific Documentation Center (INSDOC) was established in 1952 with the technical assistance from the UNESCO. It was established to provide information support to scientists and researchers of the country. The INSDOC is functioning under the Council of Scientific and Industrial Research (CSIR), which is an autonomous body of Science and Technology, providing information and documentation services both at the National and International levels.

INSDOC is now known as National Institute of Science Communication and Information Research (NISCAIR). INSDOC and NISCOM (National Institute of Science Communication) are merged into single entity with effect from 30th September 2002, leading to formation of a new merged entity known as NISCAIR.

Major Objectives of INSDOC

1.  To meet the information needs of the scientific research organisation, universities, government establishments and individuals such as researchers.
2.  To act as a single point access for science and technology information generated in India.
3.  To develop human resources in the area of library, documentation and information science, technology, management, systems, services, products and marketing.
4.  To collaborate with international information agencies evolved as an integral part of the globalisation process in the field of information and documentation.
5.  To act as a facilitator in furthering economic, social, industrial, scientific and commercial development by providing timely access to relevant and accurate information.

6. International coordination and cooperation.
7. To provide information sources and products

Services of INSDOC

INSDOC provides information and documentation services both at the national and international levels.

1. Document Procurement Service
2. Bibliography and Information Service
3. Reprographic services
4. Information Retrieval
5. Education and Training Section
6. National Science Library
7. Russian Science Information Centre
8. National Science Foundation US
9. Translational Service

Publications of INSDOC

INSDOC have the following publications:

1. Union catalogue of Scientific Serials in India.
2. National Index of Translations
3. Indian Science Abstracts (1965) monthly.
4. Annals of Library Science and Documentation (1955).
5. Directory of Indian Scientific Periodicals (1964).
6. Directory of Scientific Research Institutions (1969).
7. Directory of Scientific Research in Indian Universities (1974).
8. Directory of Current Research Projects in CSIR Laboratories (1972).
9. Directory of Ongoing Research Projects in India.
10. Directory of testing Facilities in India.
11. Contents List of Soviet Scientific Periodicals (Monthly).
12. Russian Scientific and Technical Publications (Bi-monthly).

Online search of Teacher Education Databases

A database is a collection of information that is organised so that it can easily be accessed, managed and updated. It is a collection of records or a file or collection of files brought together as a single file commonly accessed by a given set of programs. Database can be classified according to types of contents, bibliographic, full-text, numeric, and images.

The advent of computers and information technology brought out sea changes in the process of information storage and retrieval. Online searching of databases is a recent phenomenon. This phenomenon has occurred as a result of application of computers and communication technology to information storage and retrieval activities.

Online search facilitates a searcher at the remote terminal to access databases, containing bibliographical and other data. Online search is just like a two-way conversation between the searcher and the computer system. Therefore, online system is also called an interactive or conversational system. Online database can be stored on digital media (CD-ROM).  The print out can be taken out when required.

Online Search Process

The first stage in conducting a search is to develop a clear specification of the information required by the end-user. Formulate a search question which should be as specific as possible. By taking some analysis of search topic into its various concepts or aspects, one would produce a few significant terms that can be used as keywords to search with.

The second stage will be the selection of the database or databases and selection of the service vendor. After the selection of database, the question must be translated into 'query language' specific to that database.

Boolean operators are used to search strategy to retrieve relevant information, Boolean operators such as AND, OR, NOT are used to frame effective search strategy.

Advantages of Online Searching

1. Speedy search can be conducted on a particular subject.
2. Direct interaction of the searcher with the database to identify the relevance of the selected reference to the users' requirement.
3. Facility of using Boolean logic, which allows limiting or expanding the search required.
4. Online search can be conducted on different databases leading to the selection of the comprehensive literature on the subject of search.

ERIC (Educational Resources Information Centre)

The ERIC (Educational Resource Information Centre) database is sponsored by the U.S. Department of Education to provide extensive access to educational related literature. ERIC provide ready access to education by increasing and facilitating the use of educational research and information to improve practice in learning, teaching, educational decision-making and research. ERIC provides coverage of journal articles, conferences, meetings, government documents, theses, dissertations, reports, audio visual media, bibliographies, directories, books and monographs. It covers all aspects of education, preschool to post secondary and adult education, and all topics with in broad discipline.

User Education in Academic Libraries

User education is mainly concerned with providing guidance and instructions to the users for the proper use of library collection individually or collectively. Such programmes are organized to ascertain the information needs of the users, to help the users in the expression of their requirements and to enable them to use the library effectively and efficiently. This can be achieved with the help of user education programme. Educating a user is important for the successful functioning of any organisation. User education is also called library instructions.

Users are the persons who come to the library for use of documents. Educate to these users in the methods by which libraries can be used efficiently is called user education.

**Definitions**

According to Mews, "user education is instruction given to the readers to help them to make the best use of the library".

Sahi gives the most simple definition when he says that instructions given to readers to help them to make best use of the library, is user education. Harrods Librarian glossary defines user education as "a programme of information provided by libraries to users to enable them to make more efficient independent use of the library's stock and service".

UNESCO defined user education as any effort or programme, which will guide and instruct existing and potential users, individually or collectively with the objective of facilitating:

b. The recognition of their own information needs.
c. The formulation of these needs.
d. The effective and efficient use of information services and
e. The assessment of their services.

Thus user education is a continuous programme aimed to making the users of information aware of the value of information and to motivate them for use of information sources.

**Need for User Education**

1. Growth of Information.
2. Non-use of resources.
3. Growth in the number of inter and multidisciplinary subjects.
4. Unfamiliarity of users about library system.
5. Revolutionary change in the physical forms (from print to digital) of documents.
6. New methods of information transfer.
7. Change in the system of examination.
8. Absence of proper assistance and guidance.
9. Limited financial resources.

**Objectives of User Education**

The major objective of user education is to educate the user about library techniques, library resources and services, and turn him from a potential user to actual user.

1. To create an awareness and understandings of library, information sources and services.
2. To provide general orientation and initiation of users for the entrants in the institution.
3. Training in the use the library materials and services.
4. To increase the reading habits of users and the development of library consciousness among the users.

5. To give a complete and comprehensive picture of the universe of knowledge.
6. To bring reading materials, users and the faculty together and create conditions which encourage reading for pleasure, self discovery personal growth, sharpening intellectual curiosity and research endeavour.

These objectives can be achieved through *user awareness, library orientation* and *bibliographic instructions.*

**Methods of User education**

**1. Hand books and bibliographic aids**

Hand books and printed bibliographic aids to do make important and vital contributions to the education of the library user.  Generally well organised and service motto libraries publish a directory like "Hand book of college library", "Library guide", Know your library etc.  These hand books provide library rules, collections, various types of services etc.

Printed bibliographic aids are separate items, such as map of the library, a chart of the classification schedule, an explanation of the card catalogue or an index.

**2. Audio Visual method**

During recent years, there has been in increasing interest in the use of audio visual media, such as films video tape/slide presentations for library education in an economic way.  Films like key to the library", "How to use the library" contact with books etc, serve the same purpose as the library tour.

**3. Library tour**

In this method the student's or a group of students are taken on round the whole library by one of the staff members.  While on tour readers are familiarized with the different sections, their working and the services offered by each section of the library.  Through this method of library tour, the users are mentioned for using the library resources by showing them.

**4. Orientation Week**

The most popular method of teaching the library use is "freshmen's orientation week", during the period of this week readers are divided in groups of this week readers are divided in groups of 20 to 25.  At the beginning of week, they are given a leaflet of instructions an outline plan of library collections and a brief summary of classification scheme in Use.  Readers are also made about the specialized services provided by the library.  The use of reference tools and library catalogue is also taught during this week.

**5. Lecture method**

Lecture method is one of the traditional forms of education.  This is used for teaching large group of students.  This method is useful only in orientation work, but not suitable for bibliographic instructions.  This method can be more effective with the help of audio visual aids.

**6. Seminars, workshop etc**

With the help of subject experts, seminars and workshop programs are arranged from time to time to train the readers to use the library in effective way.

**7. Computer assisted instruction**

Computer assisted instruction is very useful particularly for complex bibliographical tools. Different search statements and analysis of Search results can be presented to make the user understand the implications of various techniques used in the system.

**8. Individual help at reference desk**

In many cases, reference desk may be an ideal place for point-of- need type of instruction. A user can be provided instructions on use of specific sources when needed in the context of a particular assignment. This type of instruction is frequently provided in academic libraries.

All the methods above have their relative utility in different situations and contexts. According to Brancomb "this method concentrates on teaching the student how to educate himself from books and other sources. The library becomes a workshop in which faculty, students and librarian work together. In this way, instruction in library use is a fully integrated part of the syllabus".

**Role of Teachers in the Use of library**

Library plays a vital role to develop the habit of reading and self study among the users. Teachers play a key role in the early stage to develop reading habits of the students in addition to the library professionals and parents. It is the duty of the teachers to motivate the students for using library. The proper coordination of the teacher, the parents and the librarian enhances the uses of the library. Teacher is a friend, philosopher and guide. Teacher can better encourage the students for reading library books. The role of teachers in the use of library is as follows:

1. Teacher is the source of enlightenment for the use of library.
2. Motivate the students for reading books other than the prescribed textbook, which in turn helps to develop the habit of self-study and habit of reading.
3. Classroom assignments are based on library and direct the students to refer books which are relevant to the topic.
4. During the library period, the teacher may accompany with the students. With the help of the librarian, teacher may provide books, which are helpful to develop the personality development of the students.
5. Organise competitions such as storytelling, essay competition, general knowledge, drawings, etc. For the preparation students needs different books which are available in the library. So through competition students can use the library.
6. With the help of the librarian, teacher can organise orientation lecture in the library. It will help to understand more about the library and its functions.
7. By arranging book review in the class, teacher can promote the use of library.
8. By arranging book exhibition periodically, the teacher can promote the use of books and library.
9. Teacher may give prize and gift in the form of books to the students.
10. As a member of the library committee, the teacher provides valuable suggestions for the promotion of the use of the library.

**Role of the Parents in the use of the library**

In addition to the teachers, parents are also expected to motivate their wards for the proper use of library. They are:

1. Develop the habit of visiting the library and encourage the students to use their leisure time for reading library books.
2. Motivate the students to become the membership in nearby libraries (public library).
3. Visit the libraries along with their wards and spent time in the children section of the library.
4. Some useful books are to be suggested by the parents at the early stage, priority to moral story, biography of freedom fighters, scientist and so on.

5. Brings their children to the book exhibitions and gives book as gift for their birthday and for school attainment.

Library Committee

A library committee is necessary in the interest of smooth running of the library. A library authority may appoint a library committee. A library committee is a body or an organization consisting of persons assigned a particular job.

A library committee mostly supervises and advises or merely advises the librarian in those matters where the participation of academic staff and students may prove to be useful. It is desirable that it should be advisory in nature and not to perform administrative functions. The library committee should restrict itself to general policy and not with specific applications.

Constitution of Library Committee

Like the power and functions, the composition of library committee also differ from one to another based on the nature, the environment and the objectives of the parent institution. There is no hard and fast rule for the constitution of the library committee. The constitution of the library committee is depending upon the following three factors. They are: nature of the library; the environment of the library; and the functions of the library.

The library committee consist of a Chairman, who preside over the meeting and is responsible for the executive committee. In academic library, the head of the institution will be the Chairman of the library committee. In Special libraries, the director will be the chairman of the committee. The librarian of the respective library is acting as an ex-officio member of the committee and also acts as a convener or the secretary of the library committee. The number of members representing the committee depends on the type of library, size and functions of the committee. Generally, the constitution of the library committee includes:

1. Head of the Institution          - Chairman
2. Librarian                              - Convener or Secretary
3. Two members from the faculty – Members of the Committee (number depends on size)
4. Student Representative /s        - Member of the Committee (from users depend on number of user).

Librarian role in Library Committee

A library committee is responsible for policy making and the librarian is to implement the policy. The librarian generally acts as the Secretary as the committee and his duty is to prepare the agenda for the committee meetings. The librarian should prove himself as a reliable guide to the committee. The committee should not interfere in the internal working of the library except through librarian.

Functions of the Library Committee

The library committee is mainly concerned with executive planning of the administration of the library, overseeing the library and solving its problems. Its main functions are:

1. to formulate a development plan for the library.

2. to formulate library policy in relation to the development of resources for instruction.

3. to frame rules and regulations for the use of the library.

4. to employ competent and adequate staff.

5. to make provision for sufficient funds to met the expenses of the library.

6. to check the implementation of library policy by the librarian and library staff.

7. to check library expenditure and approve estimation of anticipated expenditure, to allocate the fund to the library and find out ways and means for additional funds required for extension of library.

# Information Literacy

User education is an important aspect in promotion of the use of libraries. Academic libraries are mainly to serve the academic community consists of students and teachers to cater their information needs for teaching and research. User education is important to improve the image of a library. The need for user education is necessitate due to the implications of Information Technology in library products and services. Users need an assistance or training in the use of library sources and services in modern libraries. This type of orientation to use the library is known as information literacy programmes.

## Concept of Information Literacy

The concept of information literacy emerged with the advent of information and communication technology in the early 1970s. Information literacy is the vital process in modern information society. Information literacy makes the person capable to recognise when information is needed, how to locate it, how to evaluate information and use it effectively and efficiently. Information literacy includes both computer literacy and information literacy. Information literate people are effective searchers and consumers of information. They are critical thinkers and lifelong self learners.

## Definition of Information Literacy

The American Library Association (ALA) Presidential Committee on Information Literacy in its final reports states, "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." Information literacy is an ability to find, use and communicate information effectively and efficiently. It is the ability to use information from various sources in an effective and efficient manner to promote learning.

The Association of college Research libraries (ACRL), information literacy is "to recognize when information is needed and have the ability to locate, evaluate and use effectively the information need".

According to Moore, information literacy means " a mastery of the process of becoming informed." Information literacy means information awareness in persons about the needed information. It is a set of skills which enable the individuals to recognise their information needs. An information literate person can access information concerning his work, education etc. It helps one to access wide range of information resources including e-resources and services.

## Objectives of Information Literacy

The main objectives of information literacy programmes are as follows:

1. To educate the users and to build information literacy skills.
2. To make the individuals aware of various search techniques of retrieval of information from the internet.
3. To educate the users about how to determine their information needs.
4. To educate the individual about the various web searching techniques.
5. To educate the learners about how to evaluate and establish the authenticity and reliability of information.
6. To educate the learners how to use accurate information for critical thinking, problem solving and decision making.

## Need of Information Literacy

The information literacy programme is needed because of the following reasons:

1. To access the needed information effectively and efficiently.
2. For maximum utilisation of information resources for teaching, learning and research.
3. To evaluate information sources critically.
4. To use information effectively for specific purposes.
5. To understand the economic, legal and social issues related to information.
6. To analyse the information critically in all its form.
7. To use the information ethically and legally.

Teachers and librarians can play a significant role in developing digital literacy skills by integrating digital technologies into students' learning. It can be provided through explicit instructions and by allowing students to explore and express themselves through digital technologies. The information literacy programme lays more emphasis on teaching on part to develop and enhance a set of critically thinking skills.

Information Literacy for Teacher Education

Information literacy is needed for teacher education due to complexity of information resources in teacher education and wide variety of information sources in teacher education spread over to different discipline such as Management, Psychology, Sociology, Technology, and so on. In addition to traditional print sources, libraries are changed to digital environment of both print and electronic resources demanded the need for information literacy programmes both to the teacher educators and student teachers. Teachers are providing right information to the right students in right time, which necessitate the quality of judging and evaluating various information sources to establish its reliability, authenticity, validity, accuracy, currency etc before using it. Growth and publication of information sources in databases leads to develop the habit of searching and retrieving information from the digital environment. To facilitate the effective method of teaching and learning process, information literacy skills are to be incorporated in the teacher education curriculum and information literacy programmes are to be provided regularly to promote information literacy standards among the teacher educators and student teachers. It is the duty of the librarian and faculty members to enhance students' ability to search, to use and evaluate information sources

Information Literacy Programmes in Teacher Education Libraries

Information literacy programmes in teacher education libraries includes user education, library instructions, bibliographic instruction and so on. These programmes are useful to describe the resources and services of the library. But the ICT environment requires the librarians to play a more important role through information literacy programmes.

There are number of methods available for providing information literacy. They are:

1. Through online
2. Through short-term separate courses
3. Integrated across the curriculum

A library may separate programmes for providing information literacy to the students. This instructional programme can be divided into the following categories:

1. Bibliographic instructions
2. Computer Literacy
3. Introduction Research
4. Web-based information seeking.

These instructions can be provided through demonstration or lecture method or through assignments. A library can provide a number of different information courses. It can also be done by

organising discipline oriented workshops, seminars, and conferences on information literacy programmes. A librarian along with faculty members can play a vital role in motivating the students to learn information literacy skills.

User and their Information Needs

Users are the most important component of a library. It is very important to study the relationship between the user and the library. The users are the person who uses the sources and services of a library. The information needs vary from one user to another and from one type of library to another. The users may be students, researchers, teachers, scientists, planners, governments officials, etc. The information needs of each category vary. A manager of an organisation needs information to take right type of decision. A researcher needs information to keep himself up-to-date in his/her area of interest. In academic library, users are teachers, students and researchers. In public library, users are mainly children, housewives, retired persons, businessmen, neo-literates, etc.

Ranganathan has grouped users on the basis of various types of reference services. They are freshman, ordinary inquirer, specialist enquirer and general reader. Freshman is the new member of the library. An ordinary inquirer is the ordinary reader with simple information need. A specialist user is one who is specialised in a particular subject area. His information need is more complex. The purpose of a library is to provide the right information to the right user at the right time. In order to provide effective and efficient information services to the users, a librarian should ascertain the information needs of the users.

Types of users and their Information Needs

Different classifications for users are given by different authors. Users can be broadly classified into the following categories:

1. On the basis of nature of their activities such as students, researchers, teachers,etc.
2. On the basis of nature of their work such as businessmen, managers, executives, etc.
3. On the basis of their library experience such as experienced and inexperienced users.

Users are classified into different groups based on the user approach to information in libraries. They are as follows:

1. Potential Users: The user who needs information which can be provided by specific service.
2. The expected Users: The user who is known to have the intention of using certain information services.
3. The actual User: The User who has actually used a information service regardless of whether he derived advantages from it or not.
4. The Beneficiary User: the user who derives a measurable advantage from information services.

Information Needs in Education and Research

In education system, there are generally three types of users, students, teachers, and researchers.

Students: They need information to solve their academic needs such as preparing notes, assignments etc.

Teachers: They need information for preparing lectures, updating their knowledge, presenting a paper in seminars, for writing books, articles etc.

Researchers: They are the biggest consumers of information and they need information on a regular basis. They are both producers (generators) and consumers (users) of information. They need information to:

1. Keep themselves up-to-date about the new developments that are taking place in their areas of research.
2. Gather specific peace of data.
3. Gather information needed at different stages of their research work.

Information would not only keep the researchers up-to-date but may suggest new ideas and methods of experiments. Their information needs vary at different stages of their project. For example, before the start of the study, they need information to undertake a thorough literature search. They have to examine various sources of information in their areas of interest. Thus researchers need information throughout their project on a continuing basis. The nature of information varies from time to time or from one stage to another.

Assessing Information Needs of Users

Information needs of the users can be assessed through user studies. User studies may be defined as a systematic study of information requirements of the users. There are a number of methods which can be used to identify what exactly a user wants from the library and what is his information needs. The collection, development and providing services to the users should be based on the information needs of the users.

Definition of User Studies

The concept of user studies has been defined differently by different authors. Britain defined user studies as "empirical studies of the use of, demand or need for, information." User studies are focussed on users to understand directly or indirectly their information needs, behaviour, and use pattern.

Information Seeking Behaviour

The information seeking behaviour means the way a user seeks information and uses it. It is related to the verbal behaviour of the user. Information seeking behaviour means the way users find the information and the way they use it.

Information seeking behaviour depends upon the information needs of the users. Information needs depend upon the purpose of the use of information. Some of these purposes or motives give rise to information need. To satisfy such needs, users adopt many ways and means of accessing information. Thus, information seeking is the process of collecting and receiving information by different means. it may be through various sources of information.

Objectives of the user study

Objective for conducting user studies are as follows:

1. To identify the level and kind of users' need.
2. To find out the shortcomings of library systems and services.
3. To enhance the quality of library services.
4. To find out the problems or limitations which seem to discourage the use of library sources and services.
5. To find out the future information needs of the users.
6. To design and develop need-based and user-based library services and sources.

Method of User Study

There are number of ways user studies can be conducted to identify what exactly users need. There are two methods for conducting user study - direct and indirect method. The most common methods are as follows:

1. Survey method that includes questionnaire and interview method
2. Observation Method
3. Indirect or secondary analysis method

a. Survey Method

A survey is conducted through a questionnaire or interview method to find out opinion about the library services and sources. This method offers the users an opportunity to express their opinion about library services and sources. Users express their opinions by answering the questions related to library. With these methods, verbal or expressed behaviour of the users can be analysed. Survey method has its own merits as well as demerits.

b. Observation Method

The technique of observation involves watching and recording data. In this method the actual behaviour of the user at various service points such as periodical and reference area. Observe the borrowers' records, observation of recommendation records, observation of reference records, etc. There are two types of observations - participant and non-participant observation. Here, individual observation of various information seeking activities is taken for collection of data. For example, study of use of reference collection by the users. An observer observes the use of various resources used by them. Observing at information desk in a reference section can clarify the important questions if users are to be asked to evaluate the reference service.

c. Indirect or secondary analysis methods

The indirect method includes the analysis of already existing records such as loan records, reference query request records, etc. An analysis of these records can provide a view of the information needs of the user. The analysis of these questions can indicate about their requirements for information. On the basis of this analysis, a good reference collection can be developed. Citation analysis is the best example of studying information need of the users through indirect method. Citation analysis is explained in detail.

Citation analysis is the technique of secondary analysis which shows the user dependence on libraries and their preference for a particular channel for getting the information. It is the technique for user study.

The main objectives of the citation analysis are to evaluate and interpret citations received by authors, institutions, articles, and other aggregate of scientific activities. It is also used as a tool for measuring communication links in the sociology of science (Rao, 1983).

The bibliographic citation in articles contributed by an author in a journal articles provide very useful data on the type of documents cited. This citation analysis is very useful for determining the acquisition policy of journals, and in weeding out less important journals. Citation analysis provides useful data about the non-use of considerable proportion of periodicals in our libraries and it helps to review and update the subscription list with the help of citation analysis.

The citation analysis method is useful for producing a rank list of journal titles which help the library staff to take decision relating to acquisition of important journals. The journal which is most cited can be useful for the library. This help the library professional to take decisions related to acquisition, selection and rejection of sources materials for developing information products such as indexing and abstracting periodicals.

Citations or references provided by authors in their documents become the basis of citation analysis. The documents which are more cited by the author in a particular journal is supposed to be more useful. It also shows the extent of users' dependence and their preference for a particular journal for getting information.

<span style="color:red">Evaluation of Information</span>

**Use of Information - The Art of Book Publishing**

Publishing is documenting one's own ideas, thoughts, experience, skills, proficiency, knowledge and wisdom or day-to-day happenings in printed format so that it reaches the public at large. Book publishing is the act of creating new books. A publisher sources the manuscripts, does market analysis, does value addition, gives it size and shape, informs the world about its presence, a wail ability and leaving features, sells it and shares t profit with the author. The publisher plays the role of a mother while the author plays the father's sole. A publishing house does not produce a manuscript; it only processes the manuscript of an author to produce a book.

Editorial is the most important function in a publishing structure an involves acquiring manuscripts, organizing views, content developing , copy editing, setting it in type, finalizing the print proofs and sending it to the printing department.

A variety of techniques involved in art work preparation, layout, formatting, use of illustrative materials, typesetting, proof reading, printing, binding and packaging of the final product are all part of the production process. The production work of a publishing house is classified into three types prepress, press and post press.

Acquisitions editor is the only link between the author and the publishing team. He needs to choose the manuscript that is required an reject all the others.

**Editor's role:**

- Copy editing/detailed editing
- Light editing  (Base line editing)
- Medium copyediting
- Heavy copyediting
- cleanup editing

Copy editors and proofreaders use a number of specific symbols to mark corrections while editing a manuscript or proofing typeset pages.

Typography is the art and craft of visually communicating a message. The shape of letters, density, spacing and clarity of characters all contribute to the overall quality ad style of a printed material. A typographer is a skilled person in the selection and setting of a proportional type to create a legible, coherent and visually appealing composed text.

A layout is the designer's blue print for a book. A layout will include all the preliminary pages a chapter opening page, two facing pages showing text, with extracts, subheads, foot notes and running heads sand page numbers and back matter.

The proof reading department processes the proof then given for final printing. A complete list of references or bibliography should be included at the end of any written work. Each publishing house prefers a particular style of reference and authors could prepare their references adhering to this style.

Lastly Index should be added. Index refers to the list of words or phrases that are referred to in a book, with page numbers in which they occur. A book is said to be complete only if it includes a good index. The index serves as an identifier to quickly locate particular information available in a book. It is given at the end of a book, the index enters being given in alphabetical offer and helps in the immediate reference of a particular terminology used in the book.

**Index types:**

- Author index

- Subject index

- Index of titles

- Index of first line

**Parts of a book:**

A book that is complete, especially one in the category of non-fiction, is normally divided into the following:

1. The front matter (Preliminary matter)

2. The main body (Text matter)

3. The back matter (End matter)

4. The cover.

**Front matter:** It acts as a guide. The pages in this section are numbered in lower case roman letters (i,ii,..). In certain pages, such as half –title page, title page etc, the page numbers may not be printed or expressed ie blind folio.

**Half title page** is the first page of a book.

**Second page** is the blank page facing page of the title page

**Title page** contains the title , subtitle, author, editors name , designation and publication firm etc

**Copy right page** - page next to title page contains copyright particulars and ISBN

Dedication page

Epigraph

Foreword

Acknowledgements

List of contributors

Preface

Introduction

About the Author (Biography)

Table of contents

List of Illustrations/Tables

**Parts in Text**

Text

Decisions/ Parts/units

Chapters

Subheads

**Notes**

Footnotes

Endnotes

**Tables**

Discussion

Running Heads and Folio

**Back matter**

Appendix

Notes

Glossary

References or Bibliography

Index

**Cover**

Front cover

Spine

**Back cover**

After completing above layout printing is done though offset.  Then binding is done.  After binding depending upon its market area and subject importance the pricing is done.  After fixing the rate of a book marketing and distribution on could be alone.  Publicity and advertisements promote the sale of a book.

**Review**

Once the manuscript is submitted for publication, the processing in editorial status.  The manuscript submitted by the author reaches the desk of the acquisitions editor.  The acquisitions editor does the initial reading of the manuscript and evaluates the manuscript to ensure that it reflects the promises of the original book proposal.  The acquisitions editor also organizes for external review.

Acquisitions Editor→Author →Manuscript → In house review/External review → Market study  feed back to Author →Editorial/Production.

The main responsibility of an acquisitions editor is to  organize review of the script.  Review is always encouraged since a critical review provides suggestions for enhancement and improvement of the manuscript.  Finding a suitable and available reviewer- experienced, dedicated and unbiased- may take a longer time.

**In house Review** : It gives suggestions for the author to add or delete material or make changes to the final manuscript based on an initial reading of the manuscript.  This process normally takes one month.

**External Review:**

While in house review is under progress, the acquisitions editor sends the manuscript for the external review. External reviewers are subject experts and specialists in their field. Manuscript reviewers should be diplomatic and factful, even though their job is reviewing the manuscripts. the review may be open review or blind review. To ensure unbiased and fain comments, blind reviews or anonymous reviews are recommended. The reviewer is requested to submit a view report within the specified time.

Normally the reviewer comments on

- ❖ appropriateness and aptness of the title
- ❖ logical and technical correctness of the manuscript
- ❖ the originality of the script
- ❖ whether the script is up to date
- ❖ Completeness of the manuscript
- ❖ elaboration, clarification and condensation of the topics dealt with
- ❖ Simplicity and accessibility of the manuscript to the target audience
- ❖ Correctness of the organization and structure
- ❖ readability and coherence of the manuscript
- ❖ the suitability of publishing the manuscript.

Combining the in house and external review report, the acquisitions editor analyses and prepares a final review report. This report sent to author for feedback and then publishing process will be carried out.

**Copy Right Act**

Ancient day's knowledge was considered as the property of the society and knowledge was created for the benefit of the society. Due to the explosion of technology, particularly with the invention of printing press, there is a paradigm shift in the earlier approach. Knowledge created is treated as the property of individual who created it. The law stated recognizing and protecting the lights of the owners against the unauthorized use of the individual intellectual property.

The trademarks, patents, copy rights, geographical indications, designs and trade secrets are same of the forms of intellectual property. Copyright law recognizes and protects the original literacy, musical works, artistic works, anematograph films, graphic, special artistic work and includes the computer program, tables and compilations. In India, especially software is protected under the copy right law.

Copy right is an exclusive right of an author, writer, publishes which gives tangible shape to his abstract ideas. The copy right law protects only the expression/ words/sentences but not the ideas. Copy rights are a bundle of rights. It authorizes the authors translate, adopt, reproduce, prepare derivative works, distribute, perform and display their work publicly. The author can transfer or sell all or pout of his rights to someone. The copy right law also protects the published and unpublished literary, scientific and artistic works, whatever the form of expression, provided such works are fixed in a tangible or material form. Unauthorized use of copy righted material or using the material beyond the powers granted to the license under the agreement also amounts infringement. The infringement is also actionable under the tort law as it amounts to injury of personal rights of the owner in addition to the remedies available under the copy right Act, 1957.

The author can file a civil suit for recovery of damages for losses suffered due to injury to their rights. There is a need to bring awareness of copy rights, in specific, and the importance of intellectual property among the people to protect and retain for optimum benefits from commercialization.

Copyright Law in India

The copyright law in India is based upon the copy right Act, 1911 of UK. The evolution of copyright law in India can be traced back to the copyright Act, 1847.

1. Copy right Act, 1847: It provides protection of copyright for a minimum period of seven years and not more than 42 years. It also provides for compulsory registration of copyright. This Act is repealed by the copy right Act of 1911.

2. Copy right Act.1911: It has provided the copy right for the expressions not for the ideas and original works. Registration of copy right is not compulsory under this Act. The term of protection of copyright is throughout the life of the author and 50 years after his death.

Indian copyright Act, 1914 : This Act was repealed in 1957.

Copy right Act, 1957: It is a self contained law incorporating international commitments of Berne convention, UCC 1952. New and advanced means of communications like broad casting, litho photography etc also call for certain amendments in the existing law. Adequate provision has also to me made for fulfillment of international obligations in the field of copy right which India might accept.

The copyright Act 1957 has charged with the help of the following amendments.

1. The copyright (Amendment) Act,1983

2. The copyright(Amendment) Act, 1984

3. The copyright cess Bill  1992

4. The copyright (Amendment) Act, 1992

5. The copyright (Amendment) Act, 1994

6. The copyright (Anendment) Act, 1999

Schools do not share the same copyright interest as commercial academic publishes. The economic interests of faculty are not furthered by preventing illegal copies of their publication with emergence of a new publishing medium, enterprising researches and others have introduced a second economic model-open access- into scholarly publishes.

**Plagiarism**

Plagiarism (from the Latin "plagiare", meaning "to kidnap") is defined as "the appropriation or imitation of the language, ideas and thoughts of another author and representation of them as one's original work". Plagiarism means using another's work without giving credit. "Work" includes the words and ideas of others, as well as art, graphics, computer programs, music, and other creative expression. The work may consist of writing, charts, data, graphs, pictures, diagrams, websites, movies, TV broadcasts, or other communication media. The term "source" includes both published and unpublished sources. The underlined principal is to cite it.

According to the Merriam-Webster Online Dictionary, to "plagiarize" means

1. to steal and pass off (the ideas or words of another) as one's own

2. to use (another's production) without crediting the source

3. to commit literary theft

4. to present as new and original an idea or product derived from an existing source.

In other words, plagiarism is an act of fraud. It involves both stealing someone else's work and lying about it afterward.

Plagiarism can broadly be classified & distributed as four types:

1. Complete Plagiarism: A piece of work copied entirely from one or more sources

2. Copy and Paste: Available information off internet or electronic journals

3. Word Switch: If you copy a sentence or paragraph into your assignment and change a few words it will still be considered to be plagiarism

4. Self-plagiarism: Self-plagiarism is when you reuse your own previously written work or data in a new assignment and do not reference it appropriately

## Reasons for Plagiarism

Plagiarism can be either intentional or unintentional. People in general plagiarize others work because of one or more of the following reasons:

1. Laziness

2. Lack of time / planning

3. Fear of failure

4. Competition (parental & colleague pressure)

5. Lack of knowledge

6. Lack of enforcement

7. Pressures to publish (for career advancement)

8. Desire for getting recognition

9. To influence others

## Method of avoiding Plagiarism

One should follow some simple tips for avoiding plagiarism. These are:

1. attribute references

2. describe all sources of information

3. give acknowledgments

4. provide footnotes

5. use quotation marks wherever required

6. paraphrase the original, attributed work

7. for extensive quotations, obtain permission from the publisher of the original work

8. avoid self-plagiarism by taking permission from the publisher of the previous article authored by you

9. obtain permission for use of published drawings or other illustrations

## Plagiarism and Repercussions

Plagiarism is a serious breach of research ethics that, if committed intentionally, is considered research misconduct. Plagiarism may result in serious sanctions, including public disclosure, loss of research funding, loss of professional stature and termination of employment. Plagiarism violates the literary rights of individuals who are plagiarized and the property rights of copyright holders. Violation of literary or property rights' may result in legal action against the individual(s) committing plagiarism.

**Marketing of Information Products and Services to Teacher community**

Marketing is an important tool used to bring out the resources available in the library. It makes the information available for the users by introducing various plans and techniques to satisfy the user community. Marketing is an essential component of any organizational business plan. Academic libraries are heart of the academic institutions, which serves the objectives of the parent institution. To cope with modern trends in education arena, it is essential for librarian to know the practical aspects of marketing techniques, strategies and their applications to library and information services. Thus marketing has become an essential component in library and information centre.

According to Kotler, "Marketing is a societal process by which individual and groups obtain what they need and want through creating, offering, and freely exchanging products and services of value with others".

Need for marketing

Marketing is needed due to

- Information Explosion
- High demand for new services
- Effect of free economy
- Less usage
- To establish the value of information

Traditionally, libraries have not had the need to market aggressively but with the increased competition for funding and from bookstores; libraries need to attract the users by its products and services.

Marketers use number of tools to elicit desired responses from their target markets. These tools constitute a marketing mix. It is the set of marketing tools that the firm uses to pursue its marketing objectives in the target market. McCarthy classified these tools into four broad groups that he called the four Ps of marketing Product, Price, Place and Promotion.

Product : Product is the heart of the system. For example: Books, Journals, Databases, Document Delivery, Knowledgeable staff, information Literacy, Websites etc.

Price: Pricing of information services and products relatively new concepts. It has not considered seriously since library services were being provided 'free'. But, with the increased emphasis on accountability and self-sufficiency in relation to resources, it has become necessary to cost the various activities and to recover costs as much as possible. Ex. Photocopying and printing, etc.

Place (availability, responsiveness, access and environment) : This is component of the marketing mix that links products and customer. Ex. Personal visits, staff consultation, e-mail, phone, library websites.

Promotion (communicating with customers using various media): It involves mechanism by which the target groups are informed about the resources available, services and products offered by the library and information centers. Ex. Newsletters, Advertising, direct Mail, client consultations.

Prerequisite for Marketing

For marketing any commodity including the information commodity certain information are needed. In the case of information commodity the following conditions may be taken into consideration.

1. A well-developed store or collection of data or information.
2. Repackaging of the data of information into a marketable commodity.
3. Marketing is managerial process involving analyzing, planning, implementation and control.
4. Marketing is concerned with carefully formulated programs/plans.
5. A target community.
6. Creating awareness about the commodity.
7. Marketing of the commodity.
8. Satisfaction of the consumer with the commodity.
9. Continuous supply of the commodity without breaks or delays.
10. Feedback from the customers in the commodity, conducting of research with regard to the changing needs of the customers and improve the quality of the commodity.

Marketing of Library and Information Centers

Successful marketing includes the art of deciding the strategy/technique is used in different situation. Library and information centers as non-profit organizations have three elements namely clients to whom they provide services, the parent institution from whom they receive funds and donor agencies. Marketing helps librarian to understand their strengths, weakness, the actual needs of the users for taking good management decisions, which enable to give information services to the user more satisfactorily. Marketing plays a vital role to identify the information needs of non-users and helps to provide them with necessary information. Marketing may help to improve the image of the library and information profession through collection of revenue by performing different services to users.

Marketing techniques in Library and Information Centers

The following marketing techniques in library and information centers

1. Knowledge of purpose and resources

The librarian should know the purpose of marketing of information and the details of resources/products available for the teacher community and their specific information needs.

2. Knowledge about Competitors

Libraries are in competition with several non-profit and profit making organizations in providing information. There are private profits making organizations, which are providing information to the teacher community. In order to compete with them, the librarian must know their products and its nature.

3. Identification of users

Librarian and information managers should identify the users for marketing information services and take necessary steps for complete analysis of the marketing information. In academic libraries, user community consists of teacher educators, student teachers and researchers. The Librarian should have through knowledge on their specific information needs in different time period helps to frame effective marketing strategy.

4. Establishment of Marketing Strategy

Establishment of effective marketing strategy is the next step in marketing. It includes identifying particular goals for the marketing program and developing specific marketing strategy.

5. Using Marketing Mix Method

This includes advertising and public relations, channels of distribution and product policies. These are all communication with the library/information centers segments. It also makes to get feedback from the users.

Marketing Products for Teacher Community from the Library

Marketing products for Teacher community from the library and information centers are:

- Compilation of Bibliography
- Compilation of Electronic resources on specific topics with URLs and DOIs
- Bibliographies
- Indexing and Abstracting Services
- Reprographic services
- Selective Dissemination of Information (SDI)
- Current Awareness Services (CAS)
- Inter Library Loan(ILL)
- Publicity of library resources, etc.

Library and information centers will have to bring user and information together. However, increasing technological advancements is still putting more and more pressure on dynamic managers. As a new technology is taking place every day, it is possible for the library and information managers to give more and accurate information than how it was earlier. Information network plays a vital role to break time and space barriers and user's expectations are also changing and increasing. Hence, librarian/information managers should give high quality information products and services.

The reputation of library and information centers is based on the usage of of library services, products and resources. In the present situation, librarian/information professional have to play an important role to identify the user groups and provide them necessary information not only within or outside the library/information center. They have to adopt the various marketing plans, strategies, techniques in the marketing of library products and services

# Knowledge Management

**Introduction**

In the information age, changes that are taking place profoundly affect the way we access and use information. Scientists, Academicians and Librarians have worked hard to codify, classify and organise knowledge, thereby making it useful and accessible. Generally speaking, Knowledge Management (KM) is said to prevail in libraries when they function effectively by providing the right information to the right user at the right time. Strictly speaking, when we tap the relevant knowledge available anywhere, in any form, organise and provide them in the right mode it amounts to managing knowledge or knowledge management. Sometimes the libraries may have a Knowledge Management unit or an activity in their library without realizing it as KM. Mostly an effective library service resembles Knowledge Management.

**Knowledge Management**

Knowledge Management (KM) is the concept widely discussed in Management, Computer Science and Library and Information Science. It is the organisation and management of information resources in an organisation. There is no single definition. But in general, the knowledge management relates to unlocking and leveraging the knowledge of individuals so that this knowledge becomes available as an organizational source, which is not dependent on the particular individuals.

KM is the process of gathering a firm's collective expertise wherever it resides – in databases, on paper, or in people's head and distributing it to where it can help to produce the biggest payoff (Hibbard, 1997).

Knowledge Management is the classification, dissemination and categorization of information and people throughout an organisation (Taft, 2000).

Knowledge management is the process of transforming information and intellectual assets into enduring values. It connects people with the knowledge that they need to take action, when they need it.

Thus, knowledge management is the process of capturing and making an organization's collective expertise anywhere – on paper, documents, and databases or in people's heads.

**Principles of Knowledge Management**

Thomas H Davenport has formulated ten principles of knowledge management as listed below:
1. Knowledge Management is expensive

2. Effective management of knowledge requires hybrid solutions of people and technology

3. Knowledge Management is highly political

4. Knowledge Management requires knowledge managers

5. Knowledge Management benefits more from maps than model, more from markets than from hierarchies

6. Sharing and using knowledge are often unnatural acts

7. Knowledge Management means improving knowledge process

8. Knowledge access in only the beginning

9. Knowledge Management never ends

10. Knowledge Management requires a knowledge contract

**Need for Knowledge Management**

Knowledge management to be need of the hour due to the following reasons:

1. Competitive market place

2. Accelerating rate of innovations that need to be assimilated at an even faster rate.

3. Increasing mobility among employees lead to loss of knowledge.

4. Majorities of the employees have less and less time to acquire knowledge.

**Objectives of Knowledge Management**

Knowledge Management is buzz word for today. The famous mantra to define Knowledge Management is "providing the right information to the right people at the right time in right format." Knowledge management is the process of capturing and making an organization's collective expertise anywhere – on paper, documents, and databases or in people's heads. The following are some of the objectives of Knowledge Management especially in the context of library,

- To identify the relevant data or information and convert them as knowledge.

- To tap the available knowledge either in implicit or explicit form.

- To organise the retrieval knowledge with the right metadata.

- To disseminate right knowledge to the right users with the help of right technologies.

**Basics of Knowledge Management**

To understand the concept of Knowledge Management (KM) and to apply the same in any context particularly in libraries where data and information stored in huge quantity, one should be familiar with the basics of knowledge management and its relationships. The concept of data, information and knowledge are interrelated.

**Data**: Term 'data' is the plural form of 'datum', refers to an individual fact, statistics or a piece of information or a group or a body of facts. Data is an event or entity, which contain symbolic form and capable of being processed. E.g., 7, 15, 1947 are simply numbers, it has relationships initially or otherwise called data.

**Information**: Information is organised data. It is systematised data. Data becomes information when it is organised according to some preferences and when it is placed in context. Thus information is meaningful contextual data. E.g., 15-07-1947, now it is related based on some order and it becomes a particular day of a month of a year 1947.

**Knowledge**: Knowledge is the organised body of information or comprehension and understanding. When information is analysed, processed and placed in context it becomes knowledge. According to Roger Clarke, the term knowledge is often referred to a body of facts and principles accumulated by mankind in the course of time. Knowledge is generated in the human mind. In the above example, 15-07-1947 was our independence day, we got independence after prolong freedom struggle... is a best example for knowledge.

**Wisdom**: Application of knowledge to produce the desired results is wisdom. The dictionary meaning of wisdom is enlightened understanding of what is true or right usually acquired through long experience.

Thus, the interrelationships between data, information, knowledge, and wisdom is as follows

Data → Information → Knowledge →Wisdom

This relationship is explained by another example related to the library environment is, when a book is found in the library OPAC, it is data. By comparing the number of books for the past five years, we get the information about the number of books added every year. By analysing the collection and transaction, we will get the knowledge of what are the books browsed, borrowed, gone on inter-library loan and so on.

**Types of Knowledge**

Knowledge is classified into two namely Tacit Knowledge and Explicit Knowledge

a. Tacit Knowledge

Tacit knowledge is otherwise called Implicit Knowledge. It is the personal knowledge resident within the mind. Tacit knowledge is highly personal and hard to formalize, making it difficult to communicate or share with others. It is non-structured, intangible, cannot be recorded and represents, experiences, ideas, insights, values etc.

b. Explicit Knowledge

Well documented, recorded form of knowledge. This form of knowledge could be easily expressed, communicated and shared. It is semi-structured, represents tangible, or recorded knowledge. Documents, e-mail, voice–mail, multimedia etc., are examples of this form of knowledge. E.g. books, articles, reports, patents, etc., A explicit knowledge could be

- Documented job profile of the staff
- Documented profile of the user
- Profile of library collection
- Profile of the Organization/Library
- Library records

Explicit form of knowledge represents the later form of tacit knowledge once it captured and recorded.

**Knowledge management in the context of Libraries**

Knowledge management in libraries should include certain aspects like Knowledge Acquisition Management, Knowledge Reference Management, Knowledge Organization Management and Knowledge Dissemination Management for an effective flow of Knowledge Management. In other words, Knowledge Management can be adopted in Libraries in the following areas like,

- Acquisition or Capturing
- Reference
- Organisation or Meta data
- Dissemination or Exchange
- Human resource Management or Staffing

**Knowledge Management Tools**

Knowledge Management is not technology–based concept. Technology is only the supporter of Knowledge Management. Information Technology if well resourced, deployed or implemented provides a comprehensive knowledge base that is speedily accessed, interactive and immediate value to users. Tools and techniques used for Knowledge Management are as follows:

1. Intranet

2. Extranet

3. Portal – includes ability of web portal

4. E-Governance – ICT influence on e-governance

5. Meta Data – importance, purpose, types

6. Information Retrieval Tools – Search methods (Boolean, proximity, truncation) & retrieval types.

7. Search Engines

8. Knowledge Peer assistants – peer review

9. Data mining

10. Data warehouse

*Intranet*: An internal network based on internet and World Wide Web technology, belonging to an organization, which is accessible by others with authorization. Like the internet itself, intranet is used to share information. Corporate can easily communicate, disseminate information and facilitate project collaboration.

*Extranet*: Extranet is the extension of an intranet to include public access. The extranet uses internet protocols so users can navigate with a browser, but resides on the company's private server rather than a public internet server. The only condition for using internet, is that extranet will be available according to password credentials. This limits users to extranet pages relevant to the business and other area of browsing is kept under private and secure.

*Portal*: Portals are defined as system which gathers a variety of useful information resources into a single, one stop web page, helping the user to avoid the feeling lost on the web. Portals are user-centric while home pages are owner centric. Web page contains mainly static information, whereas portals provide information as well as interaction. Home pages organized around the needs and interests of the users.

*E-Governance*: Good governance rests on the pillars of knowledge and recognition of knowledge by the decision makers and people alike. Digitization of this entire set of knowledge within a network which is open to all individuals, opens up possibilities for all to access and use this knowledge is e-governance.

*Metadata*: Metadata is called 'structured data about data'. Metadata describe how and when and by whom a particular set of data was collected, and how the data is formatted. It has become increasingly important in knowledge base system applications. It is very essential for understanding information stored in data warehouses.

Information Retrieval Tools:

Search Engines:

*Knowledge peer Assistants*: Peer is a person who is equal to another in rank; status. A peer assist is simply a process when a team of people who are working on a project or activity, call a meeting or workshop to seek knowledge and insights from people in other teams. Peer assists is a process aims for 'learning for doing' and thereby knowledge about a project or subject or piece of work.

Peer review is the critical assessment of manuscripts submitted to journals for publication and hence is viewed as an important extension of scientific process. Therefore, a reviewer plays a

very crucial role between the authors and the editor and has certain responsibility to maintain the credibility of the journal.

*Data Mining*: Data mining is a class of database application that present data in new ways. It can also be used to predict future behaviour of a group of data in the database. The data mining software not only change the presentation of data but also discover the previously unknown relationship among the data.

*Data Warehousing*: Data warehouse is a collection of data designed to support management decision-making. It is also a reporting and query tools that store current and retrospective extracted from the various operational systems and consolidated for management reporting analysis.

**Knowledge Management in academic libraries:**

Academic libraries are service oriented organizations. They have in house operations such as book acquisition, knowledge classification etc, which requires a tremendous amount of decision making on the managerial part. Academic libraries also have the responsibility to support the teaching faculty and the ongoing research projects of the university.

Academic libraries could add a great deal of value to data warehouse by undertaking needs assessments to find out what kinds and forms of knowledge would be helpful to administrative and academic personnel in achieving organized goals. Libraries could structure the databases and search algorithms to create useful information and intelligence in appropriate areas.

Since KM has become a powerful tool for promoting innovation and realizing reengineering the various walls of life, it occupies very outstanding position in the creation of the knowledge innovations systems of a country. Hence it is very essential to focus on KM systems in libraries and information centres by which the timely information service can be provided to the online user society.

**Role of Library Professionals in Knowledge Management**

The conventional role of library and information professionals was to collect, process, disseminate, store and utilize information to provide multidisciplinary services to the personal and professional needs of the library users. But now their role is not restricted to information management only. They play major role in knowledge management programmes and identifying, acquiring, developing, resolving, storing and sharing of knowledge. Library and information professionals have to manage relationships with external providers of information and knowledge and should negotiate with them. Knowledge management has created new ground in the field of library and information science. The library professionals should have following types of knowledge:

- Knowledge about library's information sources for assets, products and services.

- Knowledge about where these sources stored are and what is its use.

- Knowledge about users including teaching staff, researcher and, who is using these sources and how to increase its uses.

- What are the current usage of these sources and how to increase its use?

- Creativity and ability to learn and adapt the new technologies to provide better services to its clients and ability to create, share, harness and utilize knowledge

- Understanding of knowledge creation process and impact of knowledge

- Information literacy skills creating, finding, sharing and using

- Understanding of the principles of "Organization of Knowledge".

Suggestions

The entire librarian and information scientist community should have knowledge management strategy or framework to use the IT to disseminate the information as demanded or required. The following points are identified for the better implementation of knowledge management in libraries mostly in Academic Libraries:

1. To provide sufficient budget

2. To provide special fund for the new technologies

3. To equip library with new technologies with network facility

4. Inter change of technical staffs among organizations/ libraries

5. Staff sharing to develop their professional skills

6. Organize a training programme and inter-change of staff for time being on National level (at least once in every two year for two months)

7. UGC may establish a monitoring centre specially for libraries to monitor the standardisations of

8. library and provide assistance

Knowledge Management Application in Teacher Education

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