Chapter 3
Role of Library Professionals for Effective Use of Library Resources
3.1 Introduction

The ultimate objective of a library is to provide maximum service to its users. Library professionals constitute an important component of the library trinity. It is generally observed that organizations are built from top to bottom, i.e. in the beginning the top executive is appointed, to be followed by the appointment of additional staff. Unfortunately, in India, the university libraries grow from bottom to top. Hardly any example exists where the university librarian is among the very first officers of the university who is appointed to build up the university library structure.

3.2 Library Professionals

Library Professionals or Librarians in higher education make an important contribution to the academic community in which they practise. In the libraries, their essential role is considered to be most important as it is concerned with the ongoing need for access to learning resources for teachers and faculty members as well as to the students and research scholars.
3.3 Categories of Library Professionals

Experienced librarians may take administrative positions such as library or information center director. Similar to the management of any other organization, they are concerned with the long-term planning of the library, and its relationship with its parent organization (the city or county for a public library, the college/university for an academic library, or the organization served by a special library). In smaller or specialized libraries, librarians typically perform a wide range of the different duties. Sometimes depending upon the nature of work they had to perform, they may be named as Cataloguing Librarian; Metadata Librarian; Application Specialist; Collections Librarian; Electronic Resources Librarian; Research Instruction Librarian; Reference Librarian; Legal research Law Librarian; Prospect researcher; Information broker; Records manager; Archivist; Indexer; Information architect; Curator; Teacher-librarian; etc.

But in higher educational institutions specially in university libraries the whole staff may be divided in the following three categories as mentioned below:

i) Professionals

ii) Semi Professionals

iii) Non Professionals

3.3.1 Professionals

Professional Staff consist of those who are employed on professional jobs
and possess degrees in library science as well as in some other discipline. These are further classified into:

i) Professional senior I / II;

ii) Professional junior; and

iii) Professional assistant.

3.3.1.1 Job Description

The following is the list of the jobs, which are usually performed by professionals in university library environment:

i) Book selection

ii) Book order

iii) Classification

iv) Cataloguing

v) Indexing

vi) Abstracting

vii) Reference service

viii) Information service

ix) Planning

x) Administration
3.3.2 Semi Professionals

Semi professionals play an important role in the working of the library as supporting staff. These semi professionals may be again divided into two categories. They are as follows:

3.3.2.1 Semi Professionals (technical)

They should possess a library qualification of the level of certificate in Library Science. In addition to their basic qualification required as per the requirement policy of the institution.

3.3.2.1.1 Job Description

The following jobs may be carried out by Semi Professionals (technical):

i) Preparation of book selection slips after the items have been marked

ii) Accessioning of books

iii) Registration of periodicals

iv) Typing of catalogue cards

v) Volumes numbering work (jacket, inside, tag, and date label numbering)

vi) Charging and discharging of books

vii) Maintenance of issue-records
viii) Typing of bibliographies, documentation list etc.

ix) Inter-library loan work

x) Shelving of books and periodicals

xi) Preparation of books and periodicals for binding

xii) Stock-taking

3.3.2.2 Semi Professionals (administrative)

The nature of jobs carried out by semi professionals (administrative) is such that these are usually done in the office of any institution. There is nothing special about them. They should have the same qualifications as expected from any office staff.

3.3.2.2.1 Job Description

The following is the list of jobs, which are usually performed by semi professionals (administrative):

i) Secretarial assistance to the librarian

ii) Maintenance of personal records (appointment, personal files, service books, confidential records, etc.)

iii) Maintenance of accounts and stores (payment of bills, maintenance of stock registers for both consumable, and non-consumable articles, purchase of stores etc.)
iv) Typing (except that of catalogue cards, bibliographies, documentation lists) and housekeeping and janitorial duties.

3.3.3 Non Professionals

Non Professional Staff consists of those who are employed on jobs like cleaning, check-gate attending, property-counter attending, gardening, guarding, etc. Accordingly they perform their duties in the libraries.

3.4 Qualifications of Library Professionals

In India professional senior - I, professional senior - II and professional junior working in the university libraries should possess qualifications comparable to those of professors, associate professors and assistant professor.

Professional senior - I (university librarian) should be a librarian of eminence. All three categories should possess first or second class master's degree in library science or first or second class master's degree in any subject other than library science plus first or second class post-graduate Bachelor's degree in library science.

But difference would be in amount and kind of experience expected. A senior professional should have contributed to professional literature. The academic and professional qualifications listed above are equally applicable to professional assistants. But they need not possess any professional experience.

Semi professional (technical) staff should possess a library qualification of
the level of certificate in library science. The certificate should be of the duration of one academic year.

3.5 Basic Professional Skills for Library Professionals in Present Context

Professional skills can be thought of as flexible knowledge and skills that allow the librarian to function in a variety of environments and to produce a variety of value-added, customized information services that cannot be easily duplicated by others. They relate to the librarian’s knowledge in the areas of information resources, information access, technology, management and research, and the ability to use these areas of knowledge as a basis for providing library and information services. The primary reasons for the need of professional skills are given below:

i) Continuing professional development is an essential part of the modern library information professional’s successful career planning & prospects.

ii) The library and information science (LIS) professionals with better personal, professional and technological skills have great opportunities and bright future in the modern libraries.

iii) Application of new ICT into the libraries immediately requires improvement of different kinds of skills and knowledge in library information science professionals.
Continuous staff training on emerging technologies is essential to learn, improve and develop various kinds of professional skills, knowledge and competencies.

There is an urgent necessity to learn a great variety of professional skills to accomplish the role of professional librarian in the constantly changing and challenging web environment. Professional competences enable librarians or library professionals to respond effectively and efficiently to the constant development of new technologies. Some of the unique competencies of the library and information science professionals are discussed in the following sections.

3.5.1 Technical Skills

In the age of 21st century LIS Professional must be aware of emerging technologies. It has become increasingly important that library professionals keep up with technology and have certain basic skills. In the current scenario library professionals must have the knowledge of HTML, Networking, scripting languages, the ability to deal with the back-end of the OPAC, the ability to translate library services into the online medium, the ability to troubleshoot basic computer and printer problems, or just a good healthy knowledge of emerging technologies.

3.5.1.1 Online Medium

LIS Professionals need to do so much online these days, way beyond basic catalogue and database searching. Librarians have to be able to use search engines
and use them well. They need to be able to find quality online resources. They need to help users set up e-mail and teach basic Internet skills. They need to be able to troubleshoot problems users are having accessing online library resources, at least to the extent where they can figure out if the problem is on the library's side or the user's side.

3.5.1.2 Ability to Troubleshoot New Technologies

Librarians or library professionals should be able to handle with the technologies in the library, to learn what problems commonly come up, and to fix them if necessary, because it is often their responsibility to fix them. As they get new computers, printers, scanners, etc. then they will need to learn how to troubleshoot those. Many librarians cannot troubleshoot these problems. Most of the time when they face any technical problem, they would just put an "out of order" sign because they just didn't have enough computer knowledge to figure out what the problem was.

3.5.1.3 Ability to Easily Learn New Technologies

Most of the time library professionals comment that there are so many new technological things at the library that they cannot carry on. Whenever they were intimated to use new gadget in library they always asked to IT team of that organization to send an expert to the library to teach library professional how to use
it. The best way to play with that technology. Learning about new technology is definitely a skill. Library professionals need to learn how to learn about new technologies without having to ask other people for help all the time.

3.5.2 Time Management Skills

Time management refers to a range of skills, tools, and techniques used to manage time when accomplishing specific tasks, projects and goals. This set encompasses a wide scope of activities, and these include planning, allocating, setting goals, delegation, analysis of time spent, monitoring, organizing, scheduling, and prioritizing. Initially time management referred to just business or work activities, but eventually the term broadened to include personal activities also.

The fourth law of library science says, “save the time of users”. This also has become more important that library professionals must develop the time management skills. Because to provide better or effective services to the user, time is also a factor. If professionals do not provide a desired information to a user on its required time, then their whole effort to search that information would be useless. So library professional also need to develop time management skills.

3.5.3 Presentation Skills

Library professionals must have highly effective presentation skills. Whenever they want to implement a new technology or service for Library users
firstly they must create a proposal for management, they must show that what would be the consequence of this new technology, which tools are to be used to train staff, etc. They must show the role of that new technology in currently being used libraries. They had to develop and practice reader’s advisory skills to promote reading habit among all levels of users. Through their presentation skills they can increase awareness of the role of libraries and library professionals in promoting information literacy. For that they can use variety of presentation techniques to convey information to their users with different learning styles.

3.5.4 Communication Skills

Communication has a great importance in providing better services to users. Library professionals communicate the value of library services to decision makers, staff and users. When they provide information to the user they must communicate clearly and respectfully. They should always have the active listening skills with users and colleagues in their workplace. Their communication skills should not only be effective with users, but must have the ability to negotiate effectively with publishers, customers, management & vendors too.

3.5.5 Customer Service

Now a day’s library professionals must be customer oriented. They can demonstrate a sincere commitment to customer service. They must try to observe
customer or users needs and try to provide their desired information on time. Through proper design and continuous improvement in user oriented information products and their competencies, they can provide the users better customer services. They have to show confidence and competences to the users to deliver perfect customer services.

3.5.6 Evaluation and Assessment Skills

Library professionals need to understand how any changes, in the way the library provides services will affect all stakeholders. Sometimes they focus on the needs of one group and ignore the fact that the changes that will benefit one group will not benefit another. With any change, librarians or professionals should create a list of all of the different stakeholders and actually discuss how it will affect each of them. Here “stakeholders” means not only the users of the library but also the staff, and administrators. If staff or administrators do not support a project that has been implemented in library, the possibility of success is poor.

For that a continuous analysis, investigation and assessment is needed to understand the users needs and stakeholders needs. Then accordingly they can design and deliver specialized value added information products and services. Time to time they can evaluates the outcome of the use of library and information resources and services for which they can conduct research to find solutions to the identified information management problems.
3.5.7 Managerial Skills

The managerial skills include technical skills which deal with things, human skills concerned with people and conceptual skills with ideas.

Technical skills involve process or technique, knowledge and proficiency in a certain specialized field. These skills are more important for librarians or library professionals, because they have to deal with a huge number of staff doing the organization's work. The technical skill involves the library professionals' understanding of the nature of job that people under them have to perform.

Human Skills involve the ability to interact effectively with people. Librarians or library professionals interact and cooperate with employees and staff also. Because library professionals deal directly with people, this skill is crucial. Library professionals with good human skills are able to get best out of their people.

Conceptual Skills involve the formulation of ideas, conceptualization about abstract and complex situations levels. Conceptual skills refer to the ability of library professionals to take a broad and farsighted view of the organization and its future, their ability to think in abstract, their ability to analyze the forces working in a situation, their creative and innovative ability and their ability to assess the environment and the changes taking place in it.
3.5.8 Knowledge of Policies, Procedures, Issues and Standards

Library professionals should maintain the current awareness of professional issues impacting libraries and should be kept aware themselves about the knowledge of library policies, procedures and service standards etc.

3.5.9 Knowledge of Information Sources and Services

The library professionals should possess the following qualities or skills for providing better information sources and services to the users of the library:

i) To develop specialized subject knowledge about the purpose of the organization

ii) To identify materials appropriate to customers' requirements and their abilities

iii) Expert knowledge in the content of information resources and ability to critically evaluate and filter them

iv) To develop and deliver convenient, easily accessible and cost effective information services to the users

3.5.10 Commitment to Life-Long Learning

The library professionals should also have the following characters for upgradation of their own professional quality, so that they can cope up with the changing trends:
i) Take responsibility for the development of one’s own professional career

ii) Remain knowledgeable in current events and technologies

iii) Pursues learning opportunities, personally or through formal training

iv) Flexible in adapting to new situations, systems, tools, environments

v) Anticipates, accepts, adapts and manages change effectively

3.5.11 Other Skills

Some other skills are listed below which should be possessed by the library professionals in present context. They are:

i) Marketing and promotion of library services

ii) Project management skills

iii) Digital rights management

iv) Knowledge management skills

3.6 Role of Library Professionals in Present Context

In ancient times, there was little if any distinction between an archive and a library. For many centuries book collecting was an opportunity either to display one's wealth, or the results of scholarship. It was not until the nineteenth century that library collections became more universally available and library science began to
codify standards for describing and organizing resources and librarians began to move beyond merely keeping and preserving books.

Melvil Dewey wrote in an early edition of the *American Library Journal*: It is not enough that the books are cared for properly, are well arranged, are never lost... [The librarian] must put every facility in the way of the readers, so that they shall be led on from good to better. He must teach them how, after studying their own wants, they may themselves select their reading wisely. (Dewey, 1876)

The role of the librarian or library professional has grown from that of a collector and preserver of information resources to a professional involved in very complex issues of organization, the dissemination of and access to information.

The role of the librarian, particularly during the past two decades, has further evolved to encompass the burgeoning technological developments.

Crawford and Gorman (1995) have defined the role of the librarian today: “To acquire, give access to, and safeguard carriers of knowledge and information in all forms and to provide instruction and assistance in the use of the collections to which their users have access... [libraries] are about the preservation, dissemination, and use of recorded knowledge in whatever form it may come”.

These definitions provide an indication of the roles which librarians have assumed during the final half of the twentieth century. They acquire information resources relevant to their user population in whatever format is available and appropriate; they organize the information within the library collection; they provide a means for users to access that information; and they educate users in accessing and
interpreting information resources. Librarians are moving beyond the traditional roles of collection maintenance and custodial duties to newer functions of translating, accessing, and marketing resources beyond the walls of the physical library collection (Rice-Livy & Racine, 1997).

The formation of a working definition of the virtual library environment and the preceding examination of the role of librarians both in the past and the components of their role today, provides many indications of the elements making up the overall activities of the librarian within that environment: to provide intellectual access to information in any format, to evaluate available sources of information, to organise and structure information, to ensure the preservation of information, and to provide specialised staff to offer instruction and assistance in interpreting resources and accessing resources.

Following are some of the roles that a library professionals can adopt to serve the user as well as the library in the present context:

3.6.1 To Provide Intellectual Access to Information in Any Format

Providing intellectual access to information is a role librarians have filled for a long time. Traditionally librarians have done this via print-based resources. During the second half of the twentieth century the range of available resources expanded to include microform, video and audio formats. The final decades of the twentieth century witnessed a further explosion in formats, and libraries can now offer information in the form of print, audio, video, microforms, numeric, computer
programs, or multimedia composites of each. For library professionals, the most important issue is to provide the information in whatever form it is packaged.

Providing electronic access to journal literature was one of the first ways libraries began to use the newly-evolving technologies. The development of electronic reserve (e-reserve) collections, demonstrates another way in which library professionals are adapting new technologies to deliver services more effectively. Electronic reserves provide the ability to digitize a printed document, video, audio, or data, so that many users can access it simultaneously without the limits of attending a library building within opening hours.

3.6.2 To Evaluate Available Sources of Information

Electronic sources of information are excellent for data which must be timely and is subject to frequent change, such as stock market data, weather reports, and population statistics. It is also valuable for the ease in which information such as full-text articles from newspapers and journals can be delivered. Printed resources may continue for a long time to be the most efficient form of delivering ideas and theories as opposed to data in subject areas such as history, philosophy, and literature.

In evaluating electronic sources of information there is also a distinction to be made between those sources of data which have been digitized for the speed and ease of transportation, and data which is of limited usefulness, volatile and fluid in nature.
3.6.3 To Organize and Structure Information

Traditionally, librarians have organized and managed information resources through classification schemes. The retrieval of information relevant to a user's enquiry has been facilitated by standardized methods of describing resources, such as MARC. It is ironic that organizing vast quantities of information is becoming a demanding issue for those involved in the development of the internet or web. For library professionals to effectively organize and structure information available on the internet, they require more than basic IT skills.

The organization and structure of information within the virtual library is critical to ensure the easiest path for the library user to access and use resources. Within the developing virtual library, users are presented with information resources in traditional formats but also in formats made possible through technological developments. Increasingly, libraries are providing access to web-based resources, either those freely available or for which the library has paid a subscription. It is essential that users can access all of these through a single interface, usually the library's catalogue.

3.6.4 To Ensure the Preservation of Information

Librarians and archivists have long-established standards and guidelines for the preservation and storage of print materials for long-term survival. The preservation of electronic and digital information resources creates new dilemmas for librarians and archivists.
3.6.5 To Provide Specialized Staff to Offer Instruction and Assistance in Interpreting Resources and Access to Resources

Information retrieval is the most obvious skill a library professional demonstrates to the users. The increasing sophistication of search engine design is creating an environment where anyone can, at varying levels of efficiency, retrieve information from the internet. It has been suggested that the skills of the reference librarian are becoming superfluous (Odlyzko, 1996). However, without professional guidance many searchers, particularly new internet-users, do not exploit the full potential of search engines and consequently do not retrieve all the relevant information available to them.

McMillan (2000) notes that within the university environment, undergraduate students can be seduced by the convenience of information available through the internet and the intervention of the librarian can teach the difference between intellectual access and electronic access.

Library professionals working at integrating new technologies to form the virtual library are discovering an increasing demand for their professional skills. The virtual library environment provides both an opportunity and a requirement for library professionals to develop greater familiarity with IT-type skills.

3.6.6 To Provide Initiation and Orientation through User Education

Generally in an academic library the users are students, teachers and researchers, whom the library is intended are almost homogeneous in nature. For an
effective information service the library professionals should ascertain about the
information requirements of their library users. The major objective of library or
information system is to satisfy the information needs of users. Access to relevant
information is highly essential particularly in academic and research libraries like
universities. Right information to the right user can pave way to new directions to
research and development.

On the basis of various type of services Ranganathan (1998) has grouped
user community on the basis of various types of services enunciated by him. They
are, the freshman, ordinary inquirer and specialist inquirer (is one who specialises
inquirers and general reader). Here the freshman is the new member of the library,
only inquirer is ordinary reader and specialist inquirer is one who specializes in
narrow field where as general readers are the associated groups. In order to satisfy
these groups, Ranganathan (1998) has suggested four types of services such as
initiation or orientation, ready reference service, long range reference and general
help to general readers respectively.

3.6.6.1 User Education

Education is a long life process, there is no end. As far as library activities
are concerned, the users are illiterates. They need some sort of user education on
how to use library resources and services. Because the collection libraries are very
complicated. To know how to use and what the service available is etc., they must
need assistance and guidance (Instructions, Initiation and education). It has its own
objectives. Broadly it means to bring the awareness about or to guide the users, about library facilities, collection, services etc, for new users this type of guidance is necessary.

3.6.6.1.1 Some of the Important Specific Objectives of User Education

   i) To make aware of the library, its content, procedures and services.

   ii) To create books reading habit.

   iii) To provide the users with basic skills for information collection.

   iv) To make the users aware of the different information holding agencies.

   v) To provide techniques for information search from secondary periodicals, reference sources and other data basis like the online and CD-ROM.

   vi) To able to ascertain the relative merit and demerits of reading materials and reference tools.

   vii) To able to survey the current affairs in the different periodicals on his own.

   viii) To provide good foundation for the continued self education by readers during their life time.

3.6.6.2 Orientation

Orientation programme includes educating or instructing user in topics like introduction to libraries, introduction to library techniques and introduction
information sources. Senior library staff or teachers of library science impart education of this type.

i) **Introduction to the Library:** it includes the following information:

a) **Library Timing:** Opening and closing hours on week days and holidays, close of the day, times for issues and return of books. Layout of library building floor areas, collection etc., location of various sections.

b) **Library Rules:** Number of books to be issued according to category of borrowers, type of books, loan period of reference books, periodicals, general books and other categories of books, overdue charges, reservation of books.

c) **Staff:** Introduction with incharges of each section.

d) **Procedures:** Membership, registration and borrowing procedure.

ii) **Introduction to the Techniques:** Scheme of classification, its features and class number, representing subjects, arrangement of subjects, catalogue inner form, author, title, subject etc., of the catalogue, how to use catalogue, how to find book with the use of catalogue. Shelf arrangement and special collections etc. Use of indexing and abstracting periodicals, Thesaurus, citation indexes, style manuals, how to use citation, introduction to all audio and video methods.
iii) Introduction to the Information Sources

Types of reference books and information contained in this e.g., dictionary encyclopedia, directory of quotations, bibliographical dictionaries, gazetteers, almanacs, subject encyclopedia, subject biography, abstracts, indexes, several publications, demographic sources, standards, primary and secondary information sources use of non traditional sources, e-resources, digital collection etc.

3.6.7 To Provide Extension Services

The third law of library science says, "Every book its reader". The different methods or forms of extension services aim to bring documents and users together. Some of the important methods that can be carried out in academic libraries by the library professionals are given below:

i) Lecture method: may be formal / informal.

ii) Advertising: (Paper, Journal, Posters, Pamphlets). If it is limited to a particular small geographical area. Incase of online and database then it requires very wide advertisement through papers, journals etc.

iii) The workshop: About the CD-ROM, online services (then give hands on practice-workshop).
iv) Brochures: It is brought out by each and every Industry. It may contain history, use benefits, comparison, purchases, addressee in brochures and leaves.

v) Newsletters.

vi) Demonstration method.

vii) Book exhibition.

viii) Display of new arrivals.

ix) Mass media.

3.7 University Librarian

The university librarian occupies a pivotal position in the university library. He/she works as an intermediary between the readers and library, and correlates and organize the various library programme and services of the library. The librarian administers the university library and is responsible for carrying out the policy decision of the governing body / library committee. As the head of the university library, he or she must be fully familiar with the different facets of modern librarianship.

The present day librarianship is a highly complex profession requiring a thorough scholarly and technical knowledge. The varied and complicated services of a modern library need to be organized and controlled by a person of competence and
judgment, who has a sound knowledge of the tools and techniques of library
profession.

3.7.1 Responsibilities of a University Librarian

University librarians are necessary in the university environment to
accomplish a number of important objectives. Some of the responsibilities are stated
below.

i) To disseminate and interpret library collection material for meeting the
informational, educational, and cultural needs of students who are
pursuing academic success and to support faculty who are engaged in
knowledge creation and classroom instruction.

ii) To provide instructional programs in information literacy and technology
fluency with an emphasis on the integration of emerging technologies to
strengthen the student’s interest and skill development for life-long
learning in his/her post-graduate life.

iii) To maintain an ongoing assessment of library and information services,
use of technologies, and resource collections that enhance and support
the university’s academic curriculum.

iv) To provide a range of programs, services, and material that strengthen
the student’s purposeful participation in the issues that face our global
society and that promote the student's lively commitment to his/her own physical and/or spiritual well-being.

v) To provide skill and expertise in the institution's initiatives, such as distance learning, that envision leveraging the library's academic information resources, its physical facilities.

vi) To engage in the selection, acquisition, organization, and preservation of integrated collections of books and journals, creatively managed, accessed, and delivered in an expanding rich environment of global electronic resources.

vii) To engage in content aggregation, access management, and data warehousing of student produced digital academic resources for increasing the availability and richness of student research and work-product that features and encourages the use of multimedia and hypermedia technologies.

Library professionals or librarians are professionals trained in the acquisition, organization, retrieval, and dissemination of information. In essence, the practice of librarianship in the present IT-based library environment will not be very different from that in the traditional print-based library. The library professionals' role will continue to include selection of suitable resources, providing access to such resources, offering instruction and assistance to users in interpreting resources, and preserving both the medium and the information contained therein.
3.8 Library Resources

The beginning of information sources may be traced to man's earliest attempts to record thoughts, concepts, ideas and events. Since then man has recorded several events in different forms at different period of time. Each of the form later became a source itself.

In olden days, only books, journals and newspapers constituted the sources of information. But today information has been recorded in various types of sources and the number and forms of sources are increasing in a rapid manner.

A source which transmits or embodies information is known as Information sources. In case of libraries all these information sources may be termed as Library Resources.

Dennis Grogan (Grogan, 1976) has categorized the totality of the information sources in the universe broadly into two, namely

- Documentary sources and
- Non-documentary sources.

3.8.1 Documentary Sources

These are information sources that are available in form of documents which are either printed, written or engraved materials that are intended to human
communication. The documentary sources are again categorized on the basis of the level of organization of information content as:

- Primary Sources
- Secondary Sources and
- Tertiary Sources

3.8.1.1 Primary Sources

Primary sources of information are the first published records of original research or new interpretation of an old theme or idea. These sources embody nascent, unfiltered original ideas. These sources are scattered and unorganized. The primary sources are the vehicles of new knowledge. These sources are useful to researchers to keep them abreast of the latest development in the field of research. A subject becomes a discipline in its own right when independent primary sources begin to produce in that area. The rate of growth of a discipline to a large extent depends upon the amount of literature produced in the form of primary sources. Primary sources are in a variety of forms such as:

- Periodicals
- Research reports
- Patents
- Standards
• Theses and Dissertations

• Trade Literature

• Conference Proceedings; and

• Government Publications.

3.8.1.1.1 Periodicals

Periodicals include journals, bulletins, transactions or similar works which appear at regular period such as weekly, monthly, quarterly, etc in numbered sequence. The most of the primary sources of literature appears in the form of periodicals. The article in periodicals report the result of recent research works and they are the main source of research communication for the exchange of scientific information.

3.8.1.1.2 Research Reports

Research reports are reports relating to research and development projects. Research reports generally give the results of research and development experiments and projects. They are primitive in the sense that they are published as and when research activities progress often, these are considered as primary sources of information. These are generally unpublished or semi-published literature.
3.8.1.1.3 Patents

Patent is an official document conferring an exclusive right, granted by a government to an inventor to manufacture, use or seek an invention for certain number of years; the list of such patents usually appear in the Government gazette. Patents are regarded as a part of primary resources because an invention has to be new, only then it can be patented. In each country, there is one publishing agency and these are serially numbered. In India, Indian patent office is responsible for granting patents.

3.8.1.1.4 Standards

Standards are the publications issued by certain authorities such as International Standards Organisation (ISO), Bureau of Indian Standards (ISI), British Standard Institution (BSI) etc. Standards ensures quality and reliability of the product. A typical standard is a pamphlet containing definitions, methods, properties, measurements etc of the product. The types of standards are:

i) Quality and job performance standards;

ii) Determining standards;

iii) Weight and measure standards;

iv) Standard terminology;

v) Technical terminology standards;

vi) Value and practical standards; and

vii) Financial standards.
3.8.1.1.5 Theses and Dissertations

Researchers who are pursuing M.Phil, Ph.D, D.litt, DSc etc. in universities have to write a dissertation or thesis on a specific topic as partial fulfillment of the academic programme. These are usually expected to show evidence of original research, and are supposed to form an important category of primary sources for researchers in the concerned field.

3.8.1.1.6 Trade Literature

Trade literature is an important source of information generated by commercial agencies. Trade literature aims to describe and also illustrate equipment or goods or processes or services related to manufactures, the basic objective of such a literature is to sell the products generated by the commercial agencies. It is published in various form such as technical bulletin, price lists, data sheets etc.

3.8.1.1.7 Conference Proceedings

Any paper read or presented in conference organized at local, national, international, is a primary source of information. Papers presented in these conferences, give the light on new research and development. Conference proceedings can be divided into the following categories:

i) Pre-conference literature

ii) Literature presented in conference; and
iii) Post-conference literature.

Generally Post-conference literature is considered as conference proceedings.

3.8.1.1.8 Government Publications

Quite a good number of publications are brought out by the local, State and Central Government. Publications such as Bills, Acts, Commission reports etc, are considered as primary sources.

3.8.1.1.9 Unpublished Primary Sources

There are a number of information sources which remains unpublished under the category of primary sources. These are very useful information sources for researchers especially in the field of social science subjects. They are:

- Company files
- Letters
- Memoranda
- Diaries
- Portraits
- Oral history
3.8.1.2 Secondary Sources

Secondary sources are as the name suggests are derived from primary sources. They are generally organized and arranged according to a definite plan. Scattered units of information are collected and presented in a cogent manner. The secondary sources act as repositories of assimilated and digested data or information. They are usually called organized source which acts as keys to open primary information sources. The secondary sources are published in a variety of forms such as:

- Indexing periodicals
- Abstracting periodicals
- Review of progress
- Bibliographies
- Treatises
- Monographs
- Textbooks
3.8.1.2.1 Indexing Periodicals

An indexing periodical is a regularly issued compilation of titles of articles that appear in the current primary periodicals. An entry in an indexing periodical consists of information such as name of the author, title of the article, name of the journal, volume number, issue number, year and pagination.

3.8.1.2.2 Abstracting Periodicals

An abstracting periodical is a regularly issued compilation of concise summaries of i) significant articles that appear in current primary source journal, and ii) of important new research monographs, reports, patents and other primary source publications in that field. It serves as an Index, a tool for retrieval of information on a specific subject and provides survey of current state-of-the-art of the specific subject.
3.8.1.2.3 Review of Progress

A review is a survey of the primary literature. It aims to digest and correlate the literature over a given period. It also indicates the developments and trends in the field concerned. It may appear as a collection of papers on regular basis or in the form an article in a periodical. A review provides background information to a new problem in a suitable form and serves as a key to literature.

3.8.1.2.4 Bibliographies

A bibliography is an organized list of documents relating to a given subject or person. Subject bibliography, author bibliography, national bibliography, universal bibliography, trade bibliography, incunabula bibliography etc, are various types of bibliographies.

3.8.1.2.5 Treatises

A treatise is a comprehensive compilation or summary of information in a subject. A treatise on a subject provides enough information to a person to acquire basic knowledge, so essential for carrying out advanced research.

3.8.1.2.6 Monographs

A separate systematic and complete treatise on a subject. Its limitation is up to only one subject and focus on latest and new information of the subject.
3.8.1.2.7 Textbooks

This is a book written specifically for use of students, as part of their prescribed course of study. It is a main tool of teaching. It is not intended to impart depth knowledge of a subject. A good textbook takes into consideration the method of teaching and level of readership.

3.8.1.2.8 Translations

Translations are important secondary sources of information. Their characteristics are same as those of primary or secondary or tertiary sources from which these are translated.

3.8.1.2.9 Dictionaries

A dictionary contains the words of a language or the terms of a subject, profession or vocation according to some definite order usually alphabetical one giving their meaning, pronunciation, spelling syllabification etc. Dictionaries can be categorized as General dictionaries, Subject dictionaries and Supplementary language books.

3.8.1.2.10 Encyclopaedias

An encyclopaedia is a compendium of knowledge. Knowledge is related to kind of readership, which an encyclopaedia intends to serve. Encyclopaedias can be categorized into General encyclopaedias and Specialised or subject encyclopaedias.
A general encyclopaedia is a work containing articles giving essential general information on subjects in various branches of knowledge, whereas specialised or subject encyclopaedia is a work containing articles giving information limited to a special field of knowledge.

3.8.1.2.11 Manuals

A manual is an instruction book, which elucidates how to do something by means of specific and clear directions.

3.8.1.2.12 Tables

Tables are convenient form to present data such as density, melting point, atomic weight, boiling points, reactions etc. these are useful sources in science especially physical science and technology.

3.8.1.3 Tertiary Sources

Tertiary sources are distilled out sources from primary and secondary information sources. The primary function of tertiary sources of information is to aid the searchers of information in the use of primary and secondary sources of information. Hence tertiary source is considered as key to open secondary and primary sources. The tertiary sources include the following types of information sources:
3.8.1.3.1 Bibliography of Bibliographies

A bibliography of bibliographies lists bibliographies which direct readers to useful bibliographies. It is otherwise known as Bibliographic Index. As the number of bibliographies published every year is large, bibliography of bibliographies are highly useful.

3.8.1.3.2 Guides to Literature

A guide to literature assists a user to use literature of a specific subject. It helps to evaluate and introduce literature. It lays emphasis on literature rather than the content of a specific subject. It usually covers information pertaining to primary, secondary and tertiary sources on a specific subject.

3.8.1.3.3 Directories

A directory is a list of names and addresses of persons, organisations, manufacturers or periodicals. It may list information in a way which best serves the requirements of its users so as to enable them to get the required information readily. There are various types of directories such as Industrial and business directories, and directories of specific scientific and technical organisations. They are local, national and international in scope.
3.8.1.3.4 Yearbooks

Yearbook is published once in a year. It gives important events and developments in various subjects for the year concerned. The facts and figure related to local, national and international events are arranged in a systematic order. Yearbooks are categorized into general yearbooks and subject yearbooks.

3.8.1.3.5 Trend Reports

Trend report is an exposition of a subject, giving an account of the general direction of research and trends in the subject, based on a review of the documents on current developments.

3.8.2 Non-documentary Sources

Non-documentary sources are otherwise known as 'paperless sources'. These are information sources that are available not in the form of documents. Non-documentary sources are categorized into two types namely Formal sources or institutional sources and Informal sources or human sources.

Usually users think of documents as sources whenever they require information. But there are times when documents do not yield the necessary information, then one has to look for other sources. This is where the non-documentary sources play a key role.
3.8.2.1 Formal or Institutional Sources

Formal or institutional sources include governmental organisations at the local, state or central levels, research and development organisations, industrial organisations, learned and professional societies and associations, academic institutions like universities, colleges, consultant organisations, information systems etc.

3.8.2.2 Informal or Human Sources

Informal or human sources include colleagues in an organisation, subject experts or peer groups, information gatekeepers, guides, advisors, consultants, vendors, informal groups or 'invisible colleges' etc.

Information may also be transferred, exchanged or collected in lectures, discussions, seminars and conference, get together, open house exhibition etc. These non-documentary sources serves as pointers to the primary and secondary sources, which play a significant role in scientific communications.

3.9 Electronic Resources

An electronic resource is defined as any resource which requires computer access. Any electronic product that delivers a collection of data, be it text referring to full text bases, electronic journals, image collections, other multimedia products and numerical, graphical or time based, as a commercially available title that has
been published with an aim to being marketed. These may be delivered on CD-ROM, on tape, via internet and so on.

Electronic Resources or E-resources may also be defined as all those documents that are available in the electronic or digital form. Electronic information may be broadly defined as the information stored in a medium which requires an electronic device to read its contents. The tools employed by traditional libraries, the environment and the whole concept of library services have undergone drastic changes owing to the advancements in the field of information, communication, and technology. Card catalogue which was regarded as a convenient device for easy bibliographic search has become out dated when compared to the facilities offered by electronic applications.

Electronic resources or electronic information sources offer vast opportunities for the readers. The information needed can be delivered from the most appropriate sources instantly and the user can sharpen his needs dynamically. Electronic information therefore can provide a number of advantages over traditional print based sources.

3.9.1 Types of Electronic Resources

Electronic resources (E-resources) are of different types. Some of the important types of E-resources are described below:
3.9.1.1 Electronic Journals

Electronic journals, or 'e-journals', are used for those journals and newsletters that are prepared and distributed electronically. Electronic journals may be defined very broadly as any journal, magazine, or type of serial publications which are available over the internet. These are also called as virtual journals, or online journals.

Some of them may be in CD-ROM. E-journals in CD-ROM are in physical form like books and can be acquired, stored and retrieved like a book. Which we may call as offline e-journals.

3.9.1.2 Electronic Books

An electronic book is digital reading material that user can view on a desktop or Personal Digital Assistant (PDA), laptop or a dedicated, portable device with a large storage capacity and the ability to download new titles via a network connection. It is essentially the contents of a book distributed in the form of an electronic file. Theoretically any file that holds text can be called an e-Book. It is exactly like a book except that remains in the electronic form instead of hard form. They come in various formats. There are several programmes designed for reading it. They can be downloaded in pdf, html, plain text and rich text formats. They are also available in CD-ROM, may be termed as offline e-books.
Ideally e-book should provide content of value, the ability to view online, the ability to download to a PC to view offline. E-books may be divided into the following four types:

i) Downloadable E-books

ii) Dedicated E-books

iii) Print-on demand E-books

iv) Web-accessible E-books.

3.9.1.3 Electronic Databases

An electronic database consists of electronic resources integrated in highly organized fashion so as to provide controlled access to it by their commercial providers. Thousands of databases are now available on CR-ROM as well as on the web. These databases can be divided into three types:

i) The first type of electronic databases are bibliographic in nature and are online version of existing indexing and abstracting services.

ii) The second type of electronic databases contains textual information, news, statistics, commodity prices etc. along with the bibliographic details.

iii) The third type of electronic databases are those which holds text of full-length documents, like encyclopaedias, directories and articles from journals etc.
3.9.1.4 Digitized Print Material

Several digital library projects are concerned with providing digital access to materials that already exist with traditional libraries in printed media. Digitally scanned images of physical documents are stored in files or databases as bit-mapped images for the use of readers.

3.9.1.5 Other Electronic Resources

Besides the above mentioned electronic resources there are several types of offline and online e-resources. Some of the common examples are listed below:

i) Other offline electronic resources:

- Cassettes
- Magnetic Tapes
- Microfilms / Micro fiches
- Optical Discs
- Pen Drives
- Multimedia
- CD / CD-ROM
- DVD / DVD-ROM, etc.
ii) Other online electronic resources:

- OPAC
- Internet (Blogs/ wiki etc.)
- Library portals
- Subject gateways
- Audio, Video Streaming Media, etc.

3.10 Open Source Resources

Open source resources are freely accessible, openly formatted and openly licensed documents and media that are useful for teaching, learning, education, assessment and research purposes. They are popularly known as Open Educational Resources.

Open educational resources (OER) are defined as teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use.

Open educational resources include full courses, course materials, modules, learning objects, open textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge. Resources for the implementation of open education include intellectual property licenses that govern open publishing of materials, design-principles, and localization of content.
3.11 Conclusion

The library professionals will require to reorient themselves, think creatively and adopt new technologies to generate services and resources in coming days, where their skills of structuring and organising resources are to be put to its best use. The library professionals have to be committed to sustain their role as provider and facilitator of information in the emerging and competitive space of higher education. Moreover, they would need interact with users to learn about their requirements and expectations.