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ACADEMIC LIBRARY SYSTEM

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SYLLABI-BOOK MAPPING TABLE
Academic Library System

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BLOCK V: PRESERVATION AND CONSERVATION **Unit XIII:** Preservation and Conservation of Library Materials – Methods and Techniques. **Unit XIV:** Recent developments of academic libraries and its Services	**Unit 13:** Library Materials Preservation **(Pages 211-220)** **Unit 14:** Recent Developments **(Pages 221-232)**

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INTRODUCTION

Education is the key to the spread of knowledge and nation building. Libraries are a fundamental part of education and are have been the repositories of knowledge since the ancient time. Academic libraries have been the nerve centres of academic institutions, and have enhanced teaching, research and other academic programmes. Their history starts with the chained and closed-access libraries of earlier times and moves to the present-day hybrid, digital and virtual libraries that use the latest technology for provision of information through various services. Accordingly, librarians have also changed from housekeepers concerned with protection of books against theft, mutilation and pilferage, to that of information officers, navigators and cybrarians who find themselves in the vast ocean of reading material and are busy in satisfying their clients who want information at the click of a mouse.

An academic library is a library that is a part of a higher education institution, which serves two complementary purposes: to support the curriculum of the school, and to support the research of the university faculty and students. An academic and research portal maintained by UNESCO (United Nations Educational, Scientific and Cultural Organization) links to 3,785 libraries. According to the National Centre for Education Statistics, there are an estimated 3,700 academic libraries in the United States.

Academic libraries must determine a focus for collection development since comprehensive collections are not possible. Librarians do this by identifying the needs of the faculty and student body, as well as the mission and academic programmes of the college or university. When there are particular areas of specialization in academic libraries, these are often referred to as niche collections. These collections are often the basis of a special collection department and may include original papers, artwork and artefacts written or created by a single author or about a specific subject.

There is a common observation that the academic libraries are changing faster than their respective parent institutions. Essentially everything in and around the library is changing such as services, technologies, organizational constructs, etc. Most of the academic libraries in India have been facing financial as well as technological constraints. With the advent of computers, the nature of academic libraries has changed dramatically. Computers are being used in libraries to process, store, retrieve and disseminate information. As a result, the traditional concept of academic libraries are being redefined from a place to access the books to one which houses the most advanced media including CDROM, Internet, and remote access to a wide range of resources. This can be overcome easily with the help of change management in the activities of libraries and give better services to the users.

This book, *Academic Library System*, has been designed keeping in mind the self-instruction mode (SIM) format and follows a simple pattern, wherein each unit of the book begins with the Introduction followed by the Objectives for the topic. The content is then presented in a simple and easy-to-understand manner, and is interspersed with Check Your Progress questions to reinforce the student's understanding of the topic. A list of Self-Assessment Questions and Exercises is also provided at the end of each unit. The Summary and Key Words further act as useful tools for students and are meant for effective recapitulation of the text.

BLOCK - I
ACADEMIC LIBRARY FUNCTIONS

UNIT 1   INTRODUCTION TO ACADEMIC LIBRARIES

Structure

1.0 INTRODUCTION

In this unit, you will be introduced to academic libraries. Libraries are often referred to as a knowledge stock-house which is at service of the users. The information about the human knowledge is documented and conserved using various means. The American Library Association has defined the character of libraries as 'access to information' and 'equity of access'. Till recant past all written and printed paper documents were regarded as prime means of information, this notion has changed due to the advancement in the field of electronic hypermedia. This has become the medium of storing and relaying information in the modern libraries. The method of preserving and circulating information is common among all types of libraries whether public, national or academic. The purpose of libraries since ancient times continues to be same it just that their way of functioning is no longer same. With the evolution in human civilizations the libraries have also evolved. In its quest to survive in the technically advanced atmosphere it is imperative for the libraries to also adapt. In order to adapt to modern needs different types of libraries have also developed to suit the needs of specific users.

1.1 OBJECTIVES

After going through this unit, you will be able to:

- Describe the various types of libraries
- Explain the functions of academic libraries
- Discuss the status of public libraries in India

1.2 TYPES OF LIBRARIES

Libraries have an immensely imperative role to play in the learning progression of formal and non-formal education, they are extremely important in the field of research and development, in cultural activities, in spiritual and conceptual territories, in in the field of leisure and entertainment. On basis of the type of amenities provided to the readers; libraries can be generally classified into four types:

1. Public Library
2. Academic Library
3. Special Library
4. National Library

(1) Public Library

The term 'Public Library' has been elucidated in many different ways by different specialists based on the prominence given by it to its purposes. Nevertheless, the most extensively recognized description of a public library was framed by UNESCO in 1949 which later underwent a revision in 1972 (UNESCO 2004). The following description of a public library is included in the manifesto of UNESCO:

(a) Public Library is financed for the most part out of public funds.

(b) It charges no fees from users and yet is open for full use by the public.

(c) It is intended as an auxiliary educational institution providing a means of self-education which is endless.

(d) It houses educative and informative materials giving reliable information freely and without partiality.

A public library is a kind of library which can be accessed by the common people, belonging to all spheres of society, having varied intellectual needs. Public libraries are generally funded by public funds collected by governments, for example, taxes. These libraries are managed by librarians and special library professionals, who are government employees.

Characteristics of a Public Library

The five essential features shared by public libraries are as follows:

- Public libraries usually function on the financial support gathered from collection of taxes.

- A board of professionals governs the functioning of these libraries in order to serve the public interest.

- Public libraries are freely accessible to all. Every member of the community can make use of the material available in a public library.

- Membership to public libraries is on a voluntary basis.

- Public libraries do not charge for the basic services provided.

- Many countries across the world provide their citizens the facility of public libraries. They are considered a vital part of providing the general population education and literacy.

- Public libraries are different in comparison to school libraries, research libraries, and other special libraries. They are formed with the aim to serve the information needs of the public in general. Whereas, other libraries cater to the specific needs of school going children, members of an organization, or research association.

- Many free reading materials provided by public libraries, for example, preschool story or rhyme books, picture dictionaries, etc., give encouragement to early literacy.

- Public libraries provide books and info material some of which can be borrowed and taken away and other which cannot be taken off the library premises.

- Some public libraries provide computer and the Internet facility to its patrons.

An Overview of Public Libraries

The present day public libraries are a result of ages of developments in the fields of printing, typing, publishing, ink and paper, along with an ever-increasing information-focused society, augmented marketable activity and consumption, improved fundamental philosophies, enormous growth in population and greater rates of literacy. The availability of books to general public is not a new phenomenon. The practice of providing scrolls in dry rooms to patrons of the baths in the Roman Empire can said to be a kind of initiation of libraries in the Roman Empire.

The beginning of actual public libraries can be dated back to the middle of 19th century. This was the time when public libraries started to be run by the state owned forces and funded by taxes. In this connection, Matthew Battles says that, 'It was in these years of class conflict and economic terror that the public library movement swept through Britain, as the nation's progressive elite recognized that the light of cultural and intellectual energy was lacking in the lives of commoners.'

Public libraries were generally begun with a donation, or were in the charge of local districts, churches, schools or towns. These collective and organized libraries shaped the basis of numerous academic and public library of the contemporary days.

Functions of a public library

Following are the functions a good public library

1. *Availability of information and education tools:* The principal role of a public library is to choose and to consolidate requirement-based writings

and other resources of information and education appropriate for the needs of the local community of the location of the library.

2. *Contributory towards informal self-education:* Adult members of the society rely heavily on public libraries for collection of information. They provide people with appropriate learning material in order to hone their expertise and proficiency in fields of interests. Public libraries are a good place to gain self-education in the fields of agriculture, poultry farming, bee keeping, etc.

3. *Promotion of cultural and social activities:* Many socio-cultural associations, for example, children's clubs, dramatic clubs, youth forums, teachers', doctors' or lawyers' associations, film societies etc. are provided support for the conduct their activities in the premises of public libraries or by the way of its rich educational, informative and cultural materials.

4. *Safeguarding the local material:* Yet another significant function of a contemporary public library is to classify and gather relevant cultural material existing in its area. Collection and conservation of works of art or sculpture, paintings, documents, musical instruments etc. by public libraries helps in conserving the local culture of the place. Preservation of such materials connects people with their heritage and cultural past.

5. *Strengthening the spirit of democracy:* Congregation of people from different parts of the socio-culture under one roof gradually inculcates a sense of harmony, a feeling of respect for other groups, a tolerance towards different languages, faiths, traditions and etiquette. Thus, a public library can be justified as a democratic institution in the true sense.

Organizational structure of a public library

A public library may be divided into various departments inside based on its scope, monetary condition, place, and the number of patrons associated with it.

Library control and management is a multidimensional effort involving organization, preservation, collection, circulation, and maintenance of all kinds of resources available in the library. It also entails management, training, development and employment of staff, budgeting and managing funds, and complete running of the library.

The following is the most fundamental organizational structure of a public library:

- Public Library Director
- Library Authority
- Library Committee

Types of Library Committees

Few general kinds of library committees are as follows:

- **Ad hoc Committee:** It is a special committee of members having far-sightedness and intelligence to accomplish special tasks related to the growth of library, its administration, and control. Members of this committee arrive at quick and smart decisions collectively.

- **Elected Committee:** It is a group of people who are voted for by a superior committee which deputes the task of taking decisions and completing tasks. The committee elected in such a way is however not completely free as it needs to report to the higher parent committee.

- **Self-sustaining Committee:** It is a group of people who are instrumental in the creation of the library. The entire right to manage the funds and library rests with this committee.

- **Executive Committee:** It is the committee which takes decisions related to very critical matters. All powers with respect to those issues rest only with this committee and it does not even report to its library authority.

- **Reporting Committee:** It takes decision on some crucial strategies bound by specific limitations. This committee must report to the authority for any kind of an approval.

- **Recommending Committee:** It does not have any actual power for taking decisions or conducting library operations. The recommendations of proposals made by this committee on library government are subject to approval of the library authority.
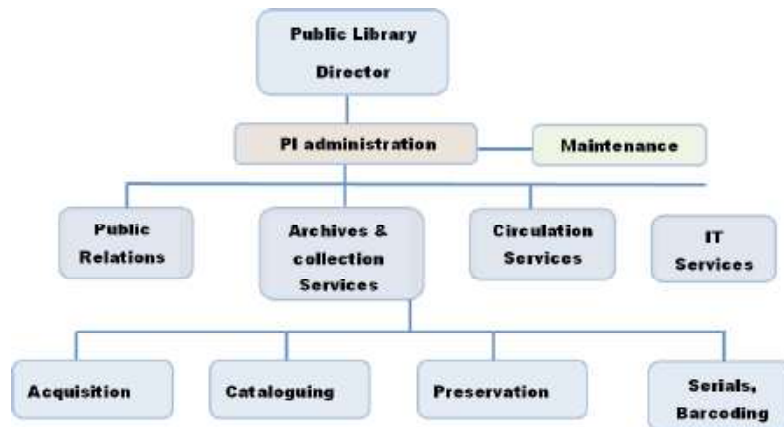
Fig. 1.1 *Public Library organization hierarchy chart*

Public library and society

All societies are made up of multi-lingual and multi-cultural features. In such heterogeneous societies, respect and regard for other people's language and culture

is necessary to fortify the social unanimity in multiplicity. That is the reason why, a public library must take an initiative in coordinating gatherings and meetings of diverse ethnic groups. Such congregations bring out the aspirations and contributions of people of diverse cultures before others. Public libraries must make full use of occasions such as, national festivals and religious festivals, or birthday anniversaries of national or religious leaders to fulfil such aims. One more prominent part that a public library plays in bringing the society together is the conservation and sharing of indigenous cultural materials. Public libraries accomplish this task with the help of local historians, literary persons and archaeologists. Such an activity brings together experts from different fields, which in turn proves to be beneficial for the society at large. Public libraries do the very important job of providing a connection between the past and future.

According to the UNESCO Manifesto, a public library provides nourishment to the spirit of man by providing him books and other reading material which relaxes him and provides him pleasure. The term 'book' referred to in the manifesto is understood in the broadest sense which means that it refers to all chronicled materials related to mankind portraying his expertise in novel writing, writing of verse, plays, creating music, painting, dance and sculpture. Just like a public library is needed to fulfil the different needs society, in a similar fashion, content related to native or local cultural is also revered very highly. Therefore, a public library is fundamentally a library available free of cost, which has the financial support of public funds. A public library provides unprejudiced service to all members of the community alike, regardless of their cast, colour, creed or financial status. It is a democratic organization which provides knowledge, education and ethos to all its patrons based on their varied requirements.

The status of public libraries in India

With the ever increasing population of India, literacy and schooling remain its biggest challenges. These are the regions where public libraries play a very important role. In fact the role of public libraries in this field as defined by UNESCO Public Library Manifesto (UNESCO, 2004) declares public libraries as the local gateway to knowledge. They have been called those institutions which provide a fundamental situation for lifetime learning, autonomous decision-making capability and individual as well as groups cultural development. According to this view, public libraries are understood as institutions made to serve people, facilitating them in their overall development. Well, despite the glorified description of public libraries by UNESCO, the state of public libraries in India however remains dismal.

Public libraries in our country possess neither frequently reintroduced books or printed matter nor vivacious non-print multimedia resources which have the capability of luring illiterate or quasi-literate people into acquiring this skill. These libraries are devoid of any kind of variety in their infrastructure. They constantly struggle with paucity of skilled manpower and financial constrictions often break their back. Due to lack of proper governing bodies, public libraries in India do not

have devoted policy makers and implementers of rules. At a time when the citizens of the country seek advanced support and facilities from its libraries, India has arisen as one of the universal frontrunners in information technology and has exported knowledge workers all across. In this era of high-tech technology, Indian population must therefore take into consideration public libraries not only as a premier of books and knowledge but also as a prominent point of entry for digital age benefits. The challenges faced by India due to being a developing country, the financial environments for libraries is not very bright, especially in contrast with the developed countries. Other than this, a wide gap is visible between the digital libraries of cities which are equipped with automation and networking facilities (especially in the in special and academic libraries) and small public libraries established in rural areas, which is home to a majority of Indians, which are completely or partially dependent for financial support on central or state government. For these libraries, collection of resources and infrastructural development is a very big challenge. Due to lack of interest in the authorities and unawareness among the common masses, development of modern tools and IT services in public libraries seems a farfetched idea.

Though the public library system in India faces numerous limitations and restraints, yet for operative distribution of information, the provision of traditional library services with is helping those who actually need and seek knowledge for specific purposes. Many public libraries, particularly in the cities, have implemented Information Communication Technology (ICT), due to the help rendered by RRRLF. In spite of these slow advances towards progression in the field of public libraries there are still miles to go before we sleep. The Indian public library system is fated to continue as peripheral to the real knowledge requirements of the general public. Most of the stored data in public libraries on our country is in a miserable state, which is nothing more than a storeroom of leisure reading material, and most of this material is available only in regional languages. Out-of-date library services do not have the capability to be extended to fulfil the patrons' needs. People visiting these libraries are faced with distinctive and diverse challenges related to accessing the library delivery of information.

Superior financial provisions, practical development, and advancement are needed to give good library services and to accomplish better results in community teaching and learning. An ardent and persistent effort is required in order to preserve value service in public libraries. Library organizers and leaders ought to have the expertise to make and cultivate a whole new generation of library culture, which encourages modification and envisions implementation of high class library services. According to Susan Kent, library leadership matters primarily spin around three issues: architecture, technology and planning. Taking into consideration the public library setup in the Indian context, none of these features seem to be anywhere in the offing yet. Christopher Edwards in his article has rightly pointed out that providing access to information has traditionally been about buildings, based around institutions offering services to onsite users. Building tomorrow's libraries will not

simply be a matter of installing rows of computers with Internet access: our users will increasingly expect to be able to access material from where they live and work. Providing access will increasingly be about developing electronic information services such as Internet portals and acting as a broker between content providers and remote users.

(2) Academic Library

An academic library is the library that is generally a part of an educational institution, for example a school, a college, a coaching or a research centre or a university. An academic library functions keeping in mind the educational requirements of the students, research intellectuals, educators and other staff of that particular educational institution. Foremost aim of an academic library is to provide maximum learning material to its patrons in order to equip them fully at their individual levels. Academic libraries are characterized into school libraries, college libraries and university libraries.

(i) School Library

A school library is a knowledge workshop, having a selection of educational media, important for optimal maintenance of the training programme. A school library functions with the aim to achieve the purposes of the educational programme. It is related to the growth of effective intellectual techniques, indoctrination of social outlooks, attainment of imperative knowledge and promotion of evolution and progression among children. A school library functions in order to help students in the course of their self-discovery, to assume high morals in life, develop educational competence by means self-study and to advance their critical thinking capacity.

(ii) College Library

A college is a very important key in the process educational development of a student. A college which is not equipped with a well-stocked library can be compared to a tree without roots. The standing of a college can be gaged by having a look at the infrastructural and stock facilities of its library. Therefore a college library should not be anything less than a teaching instrument in itself. A college library must support the goals of the college. Consequently, it can be said that the fundamental role of a college library is to support its college in carrying out its programmes to the utmost.

(iii) University Library

A university is a seat of academic learning, thus it is very important for a university to have a well-stocked library catering to the needs of all departments of the university. It won't be wrong to say that a library can do exist in the absence of a university but on the contrary, it is not possible for a university to function in the absence of a library. A university library is a vital part of the organization. It is chiefly preserved for the advantage of students, professors, faculty members, university officers, and research scholars. It plays a very imperative role in the

academic life of the university community by gathering material for scholastic use
for the assistance of learners and instructors of different departments.

(3) Special Library

The concept of special libraries gained popularity somewhere around the beginning
of 20th century. The material congregated in a special library is collected keeping
in mind the needs of a specific group of people, for example, the employees of a
particular company or members of some department of the government, or the
staff and members of a professional or research organization. Thus the information
material specific to that particular organization is made available in such libraries.

This kind of a library provides specified information resources on the subject
that the organization deals with. It patronizes a particular and restricted clientele,
and provides dedicated service, in terms of provision of knowledge and information
to them. Libraries made for the benefit of the staff in a corporate house, a particular
government department, a court of law, a hospital, a museum, an NGO, or a non-
profit organization are example of special libraries. Some academic institutions
such as, law colleges or medical schools also have special libraries within them.
Such libraries are termed as special libraries mainly because of two reasons, firstly
because of the kind of material provided by them and secondly because they are
funded separately from the rest of the institution to meet the intellectual requirements
of a particular user group.

Fundamental features of a special library

1. As discussed above, special libraries generally have a more specific
   patronage in comparison to the customary libraries found in academic
   institutions or public organizations.

2. They deal with more particular type of information specific to only that
   organization. The information material available in them and the services
   provided is more oriented and particular to the requirements of their patrons.

3. The reason behind the conceptualization of these special libraries is the
   overall development and provision of support to the undertaking of the
   parent organization.

4. Some special libraries are open to the general public and some may not be.
   The difference in both these kind of libraries lies in the kind of material that
   they have to offer. Open libraries may consist of wider research material or
   information base in comparison to, subject specific, closed special libraries.

5. Sometimes information centres are compared with special libraries, but
   actually both are different in terms of the information base provided by
   each. The basic difference between a special library and an information
   centre is that the latter has 'a very narrow scope.'

Special libraries are termed 'special' because of the availability of special
information and educational material, their specific users, and their specialized

services. For instance, a library of a research institute may have specific information for the benefit of scientists who do not have enough time to go places in order to collect the required material. Though the expanse of each varies but special libraries may be known by different names, for example, information centres, information resource collections, etc., the name is usually given by the institution that houses the library. A special library may or may not have a proficient and eligible librarian on staff. Special libraries choose and obtain printed material and other relevant material documents in the specific field in which their parent institution excels and broadcast the information to those desirous of gathering information. They offer anticipated knowledge and info to their patrons based on their demand.

Types of Special Libraries

- Corporate
- Medical
- Correctional Institutional
- Music
- News
- Museum
- Military
- Performing Arts
- Federal
- Transportation
- Theological

(4) National Library

A national library is a library explicitly instituted by the government of a country to serve as the foremost source of information for the nation. In contrast to public libraries, national libraries hardly have any provision to lend books or other material to their patrons. Generally, these libraries house abundant unusual, valued, or important works. A national library is concerned with the responsibility of accumulating and conserving the literature of the country.

1.3 ROLE OF ACADEMIC LIBRARIES AND FUNCTIONS OF HIGHER EDUCATION

As discussed, academic libraries can include school libraries, college libraries and university libraries. Use of a library by a pupil must start from the primary school. The school libraries at primary, middle and secondary levels undertake the following functions:

- Acquiring, maintaining, lending and keeping track of books and other documents of relevance to teachers and students

- Creating an environment of curiosity and interest among teachers and students about the material available in the library, and assisting them to identify and obtain the best resources matching with their needs

- Inculcating a value for books in the mind of the reader, along with cultivation of learning and reading skills so a student becomes an expert user of available resources

- Fostering strong self-learning ability and skills for life-long learning

- Enabling the teachers to use learning resources to support various programmes of the school and for their own educational development

To achieve these broad objectives for the library, appropriate courses of study for different stages of the school programme are outlined and crafted. Methodology for imparting instruction and teaching are simultaneously developed with the use of audio-visual kits.

The library at a secondary school level has key implications in the educational role it plays in order to fulfil the following objectives:

- Instil the habit of using the school library, not only with reference to their learning for course requirements but also reading for pleasure, general knowledge and recreation

- Enhancement of learning skills for information gathering on various themes by consulting reference books and other materials

- Create ways for students to visit other academic, special and public libraries to make them familiar with the library system in the country, and use them as key resource for learning at all stages of life

A university library should aim to promote a culture of extensive inquiry, and supports a university's mission to discover, preserve and disseminate knowledge and creative expression. Its role is to engage deeply with the ongoing changes in the society to deliver world-class physical and digital content, provide services critical to research, education, and outreach now and in the future. The objectives and functions of a university may roughly be grouped as follows:

(i) To provide intellectual and managerial leadership to the various fields of government, industry, health, engineering, law, defence, education, agriculture, and so on, and imbibe in them a sense of social purpose

(ii) To train research worker in all the specific areas mentioned above so that the results of research can be harnessed to improve the quality of life and the society

(iii) To conserve knowledge and ideas for future generations

(iv) To foster the ideals of social justice, religious tolerance and national integration among its citizens

If we look at these objectives, it becomes amply clear that universities have the moral obligation of developing a nation's citizens and being a key catalyst in

the growth of the country. The university campus, therefore, should provide the right environment and proper scope for development of ideas, a commitment towards relentless pursuit for excellence, dedication to learning and experimentation as well as a high regard for academic scholarship. The university library, through its collection of information, will then have to cater to the needs of teaching and learning, research, generation of new ideas, and creation of new knowledge and publication.

Like in any other library, the quantity of academic wealth in any university library requires proper organization, both in terms of their physical location, and their representation in catalogues and indexes. The process of organization should keep in mind that the retrieval of specific information should be swift and simple. The documentation and information services in a university library also has to be meticulously arranged with considerable professional expertise and in-depth knowledge of subjects.

The five major roles played by a university are as follows:

(i) Learning and teaching

(ii) Research and generation of new knowledge

(iii) Dissemination and publication of research results

(iv) Conservation of knowledge and ideas

(v) Extension and services

Objectives and Functions of a University Library

Libraries in the universities are pivotal in helping the university to achieve its aims and objectives. The major functions that are derived for the library from the overarching objectives of the university are as follows:

(i) Development of a collection in a wide variety of subjects for learning, teaching, research, publication, and so on

(ii) Getting the stock of knowledge materials organized and maintained for use

Organize and provide a variety of library, documentation and information services, both responsive and anticipatory

The core purpose of a university library is to identify, acquire, organize, store and provide on-demand access to the available intellectual and research products of scholars worldwide to their faculty and students, as well as to the greater community of learners beyond the university.

We can go on to say that some of the strategic goals of the university libraries in India today are as follows:

(i) Continuing to build and improve access to digital collections in all formats to meet the research and pedagogical needs of the university

(ii) Function as an all-encompassing resource centre for the documentation, investigation, and interpretation of the complex realities of the society and communities

(iii) Actively nurture user-focused environments committed to identifying and delivering resources and services that meet or exceed user expectations, regardless of the location of the user

(iv) Establish a comprehensible, consistent library-wide external relations and network sharing plan that focuses on new and existing services and collections

(v) Build and implement an evaluation plan for the libraries, and use the findings to make strategic and meaningful changes and improvements in its services

The central ambition of a university should be to create and foster an educational environment that promotes full personal and professional development of its clients and those who serve the university. It should also assist students in learning about and meeting the intellectual and ethical challenges of responsible citizenship. This will ensure a full and productive life for its students through opportunities to acquire the knowledge and experiences that enhance critical thinking, leadership skills, aesthetic sensitivity and social integrity. Therefore, great libraries are essential to meeting the central purpose of great universities.

Check Your Progress

1. What is the principal role of a public library?

2. When did the concept of special libraries gain popularity?

3. What is a national library?

4. List the major roles played by a university.

1.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The principal role of a public library is to choose and to consolidate requirement-based writings and other resources of information and education appropriate for the needs of the local community of the location of the library.

2. The concept of special libraries gained popularity somewhere around the beginning of 20th century.

3. A national library is a library explicitly instituted by the government of a country to serve as the foremost source of information for the nation.

4. The five major roles played by a university are as follows:

   (i) Learning and teaching

   (ii) Research and generation of new knowledge

   (iii) Dissemination and publication of research results

   (iv) Conservation of knowledge and ideas

   (v) Extension and services

1.5 SUMMARY

- On basis of the type of amenities provided to the readers; libraries can be generally classified into four types:
    - o Public Library
    - o Academic Library
    - o Special Library
    - o National Library
- A public library is a kind of library which can be accessed by the common people, belonging to all spheres of society, having varied intellectual needs.
- The present day public libraries are a result of ages of developments in the fields of printing, typing, publishing, ink and paper, along with an ever-increasing information- focused society, augmented marketable activity and consumption, improved fundamental philosophies, enormous growth in population and greater rates of literacy.
- A public library may be divided into various departments inside based on its scope, monetary condition, place, and the number of patrons associated with it.
- Though the public library system in India faces numerous limitations and restraints, yet for operative distribution of information, the provision of traditional library services with is helping those who actually need and seek knowledge for specific purposes.
- An academic library is the library that is generally a part of an educational institution, for example a school, a college, a coaching or a research centre or a university.
- An academic library functions keeping in mind the educational requirements of the students, research intellectuals, educators and other staff of that particular educational institution.
- Academic libraries are characterized into school libraries, college libraries and university libraries.
- A school library is a knowledge workshop, having a selection of educational media, important for optimal maintenance of the training programme.
- A university library is a vital part of the organization. It is chiefly preserved for the advantage of students, professors, faculty members, university officers, and research scholars.
- The concept of special libraries gained popularity somewhere around the beginning of 20th century.

- A university library should aim to promote a culture of extensive inquiry, and supports a university's mission to discover, preserve and disseminate knowledge and creative expression.

- The role of a university library is to engage deeply with the ongoing changes in the society to deliver world-class physical and digital content, provide services critical to research, education, and outreach now and in the future.

- Libraries in the universities are pivotal in helping the university to achieve its aims and objectives.

1.6 KEY WORDS

- **National Library:** It is a library established by a government as a country's preeminent repository of information.

- **NGO:** It refers to a non-profit organization that operates independently of any government, typically one whose purpose is to address a social or political issue.

- **Critical Thinking:** It means the objective analysis and evaluation of an issue in order to form a judgement.

1.7 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. List the characteristics of a public library.
2. Discuss the status of public libraries in India.
3. What are the functions of public libraries?

Long Answer Questions

1. Describe the organizational structure of a public library.
2. Examine the objectives and functions of a university library.
3. Discuss the various types of libraries.

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UNIT 2 GROWTH OF UNIVERSITY AND COLLEGE LIBRARIES IN INDIA

Structure

2.0 INTRODUCTION

In the previous unit, you were introduced to academic libraries. In this unit, we will discuss the growth of libraries in India. The eminent contributor to library science, T. S. Rajgopalan, in his 1987 presidential address to the Indian Library Association, rightly said, 'It is generally acknowledged that our libraries are underutilized in relation to investments being made in them. Non-use and low-use of libraries amount to wastage of facilities being made available. Maybe the literacy rate, lack of reading habits, and so on, are the causes for low use from the side of patrons.' R.K. Bhatt (Associate Professor and Head Department of Library and Information Science, University of Delhi, Delhi) stated that 'India must be organized by libraries in a way that libraries are fully utilized'. He further remarked that 'If library historians would address the roots and trends of library issues, they would provide a valuable service to the profession and society' (Rajgopalan, 1989). The Father of Library and Information Science in India, Padmashri Dr S. R. Ranganathan, while giving a radio talk in April 1956 said, 'An account of the libraries in the first four periods (the Vedic, the Buddhistic, the Medieval and the Muslim) must necessarily depend upon the historical research. This has not yet been done. The library profession is too small in India to spare a person to fill up this antiquarian gap. Most other historians are too preoccupied with dynastic and political history to spare sufficient time for cultural history in general and library history in particular' (Ranganathan, 1956). Thus, an historical study of the growth and development of academic libraries in India is truly required; the fulfilment of this should go a long way in removing the imbalances and gaps, as mentioned above.

2.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss the growth of libraries in India in the pre and post-independence period
- Describe the role of the UGC in the growth of libraries in India

2.2 HISTORY OF LIBRARIES IN INDIA

Libraries have been a part of the Indian society from ancient period. Most of these libraries existed with the support of the royal families and intellectual people of the time. History provides proof for the existence of flourishing library culture even during the sixth century A.D. The Nalanda University is known for its well-stocked library, there was a large collection of manuscripts on varied topics, providing knowledge about ancient times. The libraries during those times were not open to common man as they were meant for scholars. Libraries also flourished in the campuses of Takila which is also regarded as one of the earliest universities of ancient times and Vikramshila which flourished during the Pala Empire. The thirteenth century A.D was the period when India came under the influence of Mughals and they further gave impetus to the establishment of libraries as the period was known for its scholarly population. Courts of Mughal rulers appointed several scholars to be the care-takers of the libraries. The period has a heritage of literature and art works. The emperors constructed magnificent structures to house their valuable collection of manuscripts and learning material. The contributions made by the King of Jaipur, Maharaja Sawai Man Singh along with Punjab's Maharaja Ranjit Singh are remembered throughout the history for their services towards establishment of libraries in India. The renowned Saraswati Mahal Library was initiated by the King of Tanjuar during the seventeenth century A.D. It continues to be an exceptional institution for the kind of services and collection which it provided to its patrons.

The British helped in making the libraries open to common people of India. Before that they serviced as private institutions which were only for royals and scholars. Unluckily, their appearance had only one advantage as later they became the cause of severe political upheaval in the country which lasted for several years. The libraries which had been flourishing as cultural hubs in India since the time of the Indus valley civilization began to move downward. The libraries which developed during the beginning of nineteenth century were nothing like before; they had become a product of western influence.

According to the Sinha Committee the first phase of developing public libraries in India started in 1808, with the Government of Bombay proposing to catalogue libraries, those were provided with books copies that were published using the money meant for encouraging literary works. The presidency towns of

Bombay, Calcutta, and Madras had public libraries in the initial years of 1900s which were funded by foreigners living in these three towns. Among them the public library of Calcutta was the most important and it was established in 1835. The public library of Calcutta subsequently developed into the country's National Library. Soon after the public libraries were established several cities developed subscription libraries. These were not truly public libraries as books were provided only after paying a subscription. They were more on lines of private libraries as they catered to small section of society and had collection based on their requirements.

The golden era in the history of Indian libraries was during the first thirty years of twentieth century. The Imperial Library Act was implemented on 31 January 1902 and in 1906 as a result of this Act, the Calcutta Public Library was transformed into the Imperial Library by Lord Curzon. Some of the noticeable developments took place in Baroda as well. The years that followed had several noteworthy events in the history of library of India. These events were as follows:

- In 1914 the foremost conference of library workers and persons involved in the library movement was organised at Bezwada in Andhra Pradesh.

- In 1918, the 'All India Library Conference of Librarians' took place for the first time in Lahore.

- In 1933, 'All India Library Conference' was organised for the first time in Calcutta in 1933.

- In 1934 the 'All India Public Library Conference' took place in Madras.

The second phase of library movement is said to begin in 1937, by now most provinces had democratic governments. This period saw the establishment of several libraries in villages of Assam, Bihar, and Punjab; the period also saw setting up of travel libraries for villages with very small population. By the year 1942 libraries had been set up in nearly 13,000 villages. One more noteworthy taken by Government of Bombay was the setting up of the development committee for libraries and A.A.A. Fyzee was appointed as the chairman of this committee. The Committee optimistically suggested a broad library system which was going to be executed in three consecutive stages. Due to lack of funds the government was able to execute the system partially and only few of the recommendations were adapted.

The growth of libraries continued in the post-independence years though India had lots to catch to be able to come at par with the other nation's public libraries. India witnessed several challenges during the years after independence. Most of the country's population lived in villages and they were not educated. The means of communication and system of transportation were severely underdeveloped. In spite of all these issues the period saw a growth in the numbers of public libraries. There were nearly 950 public libraries which consisted of a reading room and couple of hundred books collection along with this there were over 1500 subscription libraries.

At this point it is essential to mention the Delhi public library which was established in 1951 as a joint venture of UNESCO's pilot project of public library along with the efforts of Indian Government. The main aim of the joint venture library was to incorporate latest techniques into the Indian set up. The library was also meant to be Asia's model public library. The main factors which contributed towards improving the state of public libraries post-independence could be pointed towards the union government taking a keen interest in the development of the Delhi Public Library, and moreover the initiation of several legislations of public library further helped the cause and enabled the setting up of libraries in few of the states. Even though the Indian government allocated resources for development of public library development in the five-year plans, these developments were not dependent on the five-year plan to become effective.

2.2.1 University and College Libraries

In order of importance, we can say that a library is a more prominent institution than a university, simply because a library can do without a university, whereas a university is not a complete academic institution without a library. The number of universities in India has gone up from a mere 20 in 1947, to more than 2,000 in the 1990s, and are steadily growing in number. This includes conventional universities, professional universities and deemed universities. The growth is signified by the total number of students' enrolments, creation of a number of new departments, a number of mission-oriented projects of research, and by many other social and intellectual factors. Institutions including the Indian Institutes of Technology (IITs), the Indian Institutes of Management (IIMs) and agriculture universities have innovated a number of effective educational practices. The Open University concept for distance education has also been a successful experiment at the university level. All these factors have affected university libraries to a significant extent.

Looking at the way the education sector is growing, university libraries have a very large and difficult role to play in order to meet a range of demands of information and knowledge. These demands are being made by a far greater number of people on a massive range of subjects at far higher costs and negligible grants. The beneficiaries of higher education must contribute toward the cost of learning materials because it is not possible for any state exchequer to bear all the costs.

2.2.2 Role of UGC and Others

A number of commissions and committees have been appointed by the government in the last century to review the educational system in India. They have been expected to assess and make appropriate recommendations to improve and strengthen the library systems in India. Notable among them are the Radhakrishnan Commission on higher education (1948), the Mudaliar Commission on secondary education (1952–53), the Kothari Commission on education (1964) and Karnataka State Universities Review Committee, headed by Professor K. N. Raj (1979). All these commissions have drawn due and proper attention to the State of

academic libraries in India and have made very worthwhile recommendations. These recommendations range from book funds, library and documentation services, to the need for qualified and professional staff.

The establishment of the UGC is yet another landmark in the history and development of library and university education in India. The university libraries have immensely benefitted in terms of getting book funds, grants for library buildings and other facilities, approved on the basis of the recommendations of the well-known UGC Library Committee Report 'University and College Libraries' in 1959. Dr Ranganathan was the Chairman of this Committee, which contributed to the growth and development of different kinds of university and college libraries. The UGC developed the INFIBNET programme in 1988 as the premium library network for universities and colleges, as well as taking into account other research institutions in India.

In order to provide all the desirable amenities and be effective in their purpose, the physical facility as a whole is an important aspect of a library. For this, the college library will have to be housed in an independent building, which should be functional and attractive. The University Grants Commission (UGC) supports the concept of independent buildings for a college library. A college library should have a central location with a commanding view and plenty of space around for future extension. In addition, to the usual reading, stack and work areas, facilities for browsing, for arranging exhibition, seminars, film-shows, and so on, should be added to attract more students to the library. Specific areas for teachers or researchers only need to be segregated within the library. The interior has to be aesthetically set up with mildly cultured walls, with flowers, paintings and attractive furniture. Storage facilities and space for non-book materials, plain paper copiers, microphone reader printers, audio-visual equipment, and so on, should be specifically provided. Moreover, the provision for computer rooms should be made as the future library systems and services are definitely going to be computer-based.

A person with high academic and professional expertise in managing college libraries must be at the helm of affairs, and is the most effective investment in setting up and running a successful library. Such persons should have the academic status and the salary scale of teachers. The para-support and support staff should be recruited on the basis of the size of the library, its current acquisitions and the different services it offers. There are UGC norms on all library recruitment and selection. The success of the library entirely depends on the inherent expertise and professionalism of the library staff.

A college management with a true commitment to learning and academic growth of the college would look towards the library as a lighthouse, a power station and a true temple of learning. Such management will lend full financial, administrative and managerial support to the library. It will also constitute a helpful Library Advisory Committee with the Principal of the College as its Chairperson

and the librarian as its Member-Secretary. A few senior members of the faculty and an outside library and information expert may constitute the other members of the committee.

The Radhakrishnan Commission recommended that a 6 per cent of the total college budget should be allocated for the development of their respective libraries. The Kothari Commission raised it to about 10 per cent. The Karnataka State Universities Review Committee (popularly known as the Raj Commission, as Indian economist Professor K. N. Raj headed this Commission) went a step further and recommended the setting apart of 20 per cent of the college budget for the maintenance and development of the library. A college library is one of the most critical requirements of a successful educational institution. Allocation of adequate funds, as recommended by the Raj Commission, is necessary for building a responsive service and for operating the library at the research and teaching level.

The Present Scene

While the last few pages has sketched a clear picture of what is expected for and from the college library, unfortunately, the actual situation in India does not seem to resemble this picture. Despite numerous studies and allocation of substantial financial aid from the UGC, several college libraries still continue to suffer, and are in a state of mismanagement and disuse.

Colleges cannot fully depend upon UGC grants and must generate additional funds through library fees in order to provide students proper academic facilities. These neglected libraries are in this state due to their book collections which are outdated and inadequate, unpleasant locations and physical conditions of disrepair, and mismanagement. If the aims and objectives of college education have to be achieved, it is imperative that we improve the quality of services offered by libraries.

Check Your Progress

1. What was the first phase of developing public libraries in India?

2. What can be called the golden era in the history of Indian libraries?

3. List some of the commissions and committees appointed by the government in the last century to review the educational system in India.

2.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. According to the Sinha Committee, the first phase of developing public libraries in India started in 1808, with the Government of Bombay proposing to catalogue libraries, those were provided with books copies that were published using the money meant for encouraging literary works.

2. The golden era in the history of Indian libraries was during the first thirty years of twentieth century.

3. Some of the commissions and committees appointed by the government to review the educational system in India are the Radhakrishnan Commission on higher education (1948), the Mudaliar Commission on secondary education (1952–53), the Kothari Commission on education (1964) and Karnataka State Universities Review Committee, headed by Professor K. N. Raj (1979).

2.4 SUMMARY

- Libraries have been a part of the Indian society from ancient period. Most of these libraries existed with the support of the royal families and intellectual people of the time.

- History provides proof for the existence of flourishing library culture even during the sixth century A.D.

- The British helped in making the libraries open to common people of India. Before that they serviced as private institutions which were only for royals and scholars.

- The second phase of library movement is said to begin in 1937, by now most provinces had democratic governments. This period saw the establishment of several libraries in villages of Assam, Bihar, and Punjab; the period also saw setting up of travel libraries for villages with very small population.

- The Delhi public library was established in 1951 as a joint venture of UNESCO's pilot project of public library along with the efforts of Indian Government. The main aim of the joint venture library was to incorporate latest techniques into the Indian set up.

- The number of universities in India has gone up from a mere 20 in 1947, to more than 2,000 in the 1990s, and are steadily growing in number.

- A number of commissions and committees have been appointed by the government in the last century to review the educational system in India.

- The establishment of the UGC is yet another landmark in the history and development of library and university education in India.

- The university libraries have immensely benefitted in terms of getting book funds, grants for library buildings and other facilities, approved on the basis of the recommendations of the well-known UGC Library Committee Report 'University and College Libraries' in 1959.

- At present, despite numerous studies and allocation of substantial financial aid from the UGC, several college libraries still continue to suffer, and are in a state of mismanagement and disuse.

- Colleges cannot fully depend upon UGC grants and must generate additional funds through library fees in order to provide students proper academic facilities.

2.5 KEY WORDS

- **Manuscripts:** It refers to a book, document, or piece of music written by hand rather than typed or printed.
- **UGC:** The University Grants Commission of India is a statutory body set up by the Indian Union government that is charged with coordination, determination and maintenance of standards of higher education.
- **Seminars:** It means a conference or other meeting for discussion or training.

2.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Write a short-note on the Delhi Public libraries.
2. What was the role of the UGC in the development of libraries in India?

Long Answer Questions

1. Discuss the history of libraries in India in the pre-independence period.
2. Examine the growth of libraries in the post-independence period.

2.7 FURTHER READINGS

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UNIT 3   ROLE OF OTHER NATIONAL BODIES IN PROMOTING ACADEMIC LIBRARIES

Structure

3.0   INTRODUCTION

In India, a large number of students enrol for courses in higher education in Indian colleges and universities. It is important to ensure that the students get the necessary facilities in terms of books, teaching and research facilities in the universities. Libraries are important places in universities and need to be developed as centres of learning and research. Academic libraries are promoted in several ways so that these can be developed as per the needs of the students and faculty. The government takes important steps to promote and develop academic libraries through several committees, commissions, policies and programs.

3.1   OBJECTIVES

After going through this unit, you will be able to:

- Discuss why academic libraries are essential for higher education
- Describe the need for promoting academic libraries
- Explain the role played by national bodies in promoting academic libraries

3.2   OVERVIEW OF ROLE OF NATIONAL BODIES IN PROMOTING ACADEMIC LIBRARIES

An academic library as we know is a library that is established in an institution of higher education like a college or a university. An academic library is established

to serve colleges and universities, their students and also the staff. Academic libraries are active participants as well as partners in teaching and research process. Academic libraries support students and faculty in their learning as well as research processes. The main aim of academic libraries is to provide information and resources to the students as well as staff of colleges and universities and also to provide enough infrastructures that help the students and staff to use and evaluate the information. Academic libraries have a huge collection of books and resources on every possible subject. Academic libraries offer local non-fiction, historical as well as archival volumes related to different subjects and topics. These also offer non-fiction, classical, scientific as well as modern fiction literature that the students as well as faculty can make use of.

Academic libraries have several functions in aiding the teaching and learning process. The following are considered to be the main functions of an academic library:

- An academic library functions to provide a quite environment for reading, learning as well as researching on a wide range of subjects and topics.

- Academic libraries function to provide the essential reference as well as research materials to the students like biographies, bibliographies, dictionaries, encyclopaedias, manuals, atlases, monographs etc.

- It is the function of an academic library to inform the university as well as college communities of the latest scientific and technological developments.

- Academic libraries help students to find the right resource and reference material in an easy and orderly manner.

- It is the function of an academic library to maintain all types of textbooks and handbooks related to the specific institution of higher education. Academic libraries also maintain books and materials that are written by the founders of the institution, the professors as well as the work related to the history and education program of the institution.

- The academic libraries function to help professors write research papers as well as dissertations for the use of the institution as well as students.

- It is also the function of an academic library to maintain old books and texts; especially books thousands of year old that can be used for study and research purposes.

Academic libraries support students, professors, and other academic staff in their educational pursuit. Higher education institutions have several libraries on their campuses and allow students as well as faculty to make use of subject expertise from the resources available in the libraries.

Academic libraries undertake several activities to make sure that they carry out their functions in the right manner. These libraries indulge in the activities on a regular basis to make sure that they help increase the knowledge base of the institution for teaching, learning and research.

Some of the activities that academic libraries indulge in include:

- Consult individuals as well as groups to analyse, identify and fulfil the information needs of the students as well as faculty that access the information resources available in the libraries.

- Create campus-wide information literacy programs so that every student as well as the faculty member of the institution has access to the essential and basic information materials and resources.

- Deliver classroom instructions to ensure that the information literacy skills of the students are strengthened. This is done to ensure that the information resources available in libraries are used in the right and optimal manner.

- Selecting, organising and facilitating access to the information resources and materials in a variety of formats so that the required information is available to the students as well as the faculty as and when needed.

- Develop strategies to make use of the latest technological advancements in academic library systems and their functioning.

- Planning, implementing and administering computer-based access to the information materials and resources.

- Collaborating with faculty and instruction specialists to ensure that the right information and resources are made available to aid the teaching and learning process.

- Participating in efforts and programs to raise funds for the academic libraries.

What is the Need to Promote Academic Libraries?

Academic libraries as a part of colleges and universities contribute in many significant ways to the mission of the educational institutions. These libraries support learning and teaching processes by providing information materials and resources that are easy to utilise by the students as well as the faculty. Academic libraries in several ways impact the social as well as the intellectual climate of the institution as well.

In institutions of higher education, it is very important that academic libraries be promoted and maintained in the right manner. It is essential to promote the establishment as well as the functioning of academic libraries so that these can be effectively utilised to find, use and evaluate information resources that help in furthering teaching, learning as well as research.

It is essential to promote academic libraries because of the following reasons:

- **Academic libraries act as providers of information resources:** Academic libraries to support student and faculty research make it possible for the students as well as the faculty to access information resources in many formats. The academic libraries purchase or license access to a wide range of information resources which may or may not be freely available. Most academic libraries also make available their information resources

electronically to preserve them and make them available for longer user and also for a wider audience.

- **Academic libraries act as partners in teaching and curriculum:** The libraries established in colleges and universities aid the learning and teaching process. The libraries work with the faculty to teach students so that they can use and evaluate information in the right manner. Academic libraries also indulge in the development of tools such as research guides and video tutorials that can help to teach the students in an effective manner and thereby affect their academic performance. Academic libraries also supplement in the development of curriculum wherein the resources from these libraries can be effectively used to help students learn in a better manner.

- **Academic libraries are partners in research:** Academic libraries facilitate the students as well as faculty in their research projects. Academic libraries act as repositories of a wide range of information material that can help students as well as faculty to find and use the essential and required information for any research project.

- **Academic libraries are community builders:** Academic libraries remain popular places on their campuses and serve as a hub for various academic services. These libraries offer quite places to work or study, practicing, tutoring as well as consulting. These libraries also organise events and host programs and lectures to bring people together to learn in a formal manner and thereby build communities.

- **Academic libraries make education more affordable:** As the cost of textbooks is increasing, the institutions of higher education are resorting to Open Educational Resources which are made available in the academic libraries. The academic libraries maintain course materials as well as other essential information resources that help students study their course materials of different subjects.

- **Academic libraries are valuable assets of their institutions:** Academic libraries are valuable assets of their institutions. These libraries remain intellectual as well as cultural hubs of their institutions. These libraries are partners in teaching, learning and research and thereby enrich the personal, professional and academic lives of the students as well as faculty.

Role of UGC and other National Bodies in Promoting Academic Libraries

It was in the year 1857 that universities were established in India in the cities of Madras, Calcutta and Bombay. However, these universities were not established as research centres and were more of examining bodies. These universities therefore did not have any associated libraries or academic libraries. Library facilities were first associated with universities between 1919 and 1930 but these did not play a major role in disseminating the required information for research and study. It was in the 19th century that the development of libraries started taking place in Indian universities because of the grants and donations received from philanthropists.

In 1902, the Universities Commission first recommended the development of libraries so that the students could develop a habit of independent and intelligent reading. The libraries were still not meant for research purposes and therefore a well-organised academic library system was not considered essential. On the basis of the recommendation of this commission, in 1904, the Indian Universities Act was passed that required universities and colleges to maintain well-equipped libraries.

However, these libraries were not well-maintained and stocked and were hardly made use of by the students. It was the University Education Commission of 1948-49 observed this. The Commission in the course of its study of the academic libraries found that 'libraries were hopelessly inadequate to serve the curricular needs of a modern university. They were ill-housed, ill-stocked, and ill-staffed and were totally lacking in standard literary and scientific journals. Service was in the hands of personnel that had hardly any notion of the objectives of university education. The annual appropriation for book purchase seldom exceeded the ten thousand mark.' The Commission also set aside a specific budget for libraries as annual grant to enrich their collection of books as well as reference resources. The Commission even stressed the fact that the universities were important areas of a university and the need for open access to these libraries. The Commission however did not specify any concrete measures to promote the academic libraries as the nerve-centre of universities.

After independence, the Indian government undertook several measures to remodel the education system of India. The main aim was to achieve total literacy and independence of higher education system. To achieve this, the government established the University Grant Commission in 1953. The UGC was then made a statutory body in 1956 under the Government of India to improve and maintain the standard of higher education in India.

The UGC is required to take all necessary measures to promote university education in every possible manner. The UGC also functions to determine and maintain the standard of teaching, examination and research in universities. To achieve these basic objectives, the UGC undertakes several measures like granting financial aid to universities, establish and maintain common services for university education, establish new universities etc. The UGC also formulates and directs policies and programs related to higher education in India.

As the single most important statutory and advisory body on higher education, the UGC has played an important role in the development, establishment and promotion of academic libraries in universities and affiliated colleges.

To promote the establishment and development of academic libraries, the UGC has appointed several committees and commissions over the last several years. These include:

- The Library Committee, 1957.
- Review Committee on Library Science, 1961.

- The Education Commission, 1964-66.
- Mehrotra Committee, 1983.
- Committee on National Network System for Universities/Libraries (INFLIBNET), 1988.
- Curriculum Development Committee on Library and Information Science, 1990-93.

The Library Committee, 1957

The first chairman of the UGC was Dr. C.D. Deshmukh. He emphasised the fact that while the students formed the body of the university, the faculty the soul, the library formed the heart of the university. The UGC took effective measures in granting aids and loans to the universities so that they could set up their libraries. The UGC first set up the Library Committee in 1957 to look into the condition and development of academic libraries in universities. The committee was headed by Dr. Ranganathan. With the establishment of this committee, it was for the first time that the government sought the guidance and advice of professional librarians to look into the establishment and promotion of academic libraries. The findings and suggestions of this committee were a turning point in the establishment of several academic libraries in several colleges and universities in India.

The committee surveyed the academic libraries across various universities of India and found their condition to be very poor. The libraries ran on poor facilities, insufficient budget and also poor services. The committee submitted its report in 1959 and in this report made several recommendations on the various aspects of an academic library. The various aspects that the committee made recommendations on included library grant, purchase of books, , facilities for inter-library loan, , reference and documentation services, building a microfilm collection, open access system, preparation of union catalogue of books and programs to facilitate co-operation among libraries, library personnel and also the structure of the library building and furniture. The committee also recommended that professional librarians be appointed to maintain the libraries.

The committee also suggested that a special grant be given to universities for setting up and developing new library facilities in the several departments of the universities in addition to the ones already present. This in turn facilitated the development of several new academic libraries; not very big ones; in several institutions of higher education.

The recommendations were accepted by the UGC as norms for promoting academic libraries in universities. The acceptance of these recommendations paved way for academic library development. Many universities implemented these recommendations in a successful manner to set up and promote academic libraries as centres that facilitated teaching, learning and research.

Review Committee on Library Science, 1961

In India, there were very few universities that offered and conducted certificate, diploma and degree courses in Library Science. There was no uniformity in the syllabus of Library Science and not many qualified professors who could teach Library Science in the right manner. The librarians of universities used to work as part-time faculty in library schools that led to poor standard of teaching as well as library work. This was one of the main reasons for the poor service quality in academic libraries of institutions of higher education.

The UGC on the recommendation of the Library Committee set up the Review Committee on Library Science with Dr. Ranganathan as the chairman. The main responsibility of this committee was to recommend standards of teaching, examination and research in library schools in India. The committee was responsible for preparing the curriculum for various levels of library science and also provide recommendations for conducting exams and the passing criteria. This committee recommended close cooperation between the library and the Department of Library Science of a university in order to improve the standard of the academic libraries of the university and also improve the quality of librarians. The committee also suggested that librarians maintain academic interest in order to help students and other faculty members in locating the right information from the academic library.

The committee described the objective of library education and also directed the universities not to conduct certificate courses in Library Sciences. The committee also recommended curriculum for Bachelor's and Master's degree courses in Library Science thereby making Library Science a recognised subject that could be sought after in universities and colleges. The recommendations of the committee were accepted by the UGC for implementation in library schools. These recommendations in several ways improved the standard of the academic libraries and librarians in colleges and universities.

Education Commission, 1964-66

In spite of the fact that the UGC accepted and asked universities to implement the recommendations of the Library Committee and the Review Committee on Library Science, the condition of academic libraries in the universities was far from satisfactory. The universities failed to grant the allocated funds for the development and promotion of academic libraries. In 1964, the Kothari Commission was set up by the government of India to review and evaluate the education system as well as the condition of academic libraries.

The Commission stated in the final report,-'Nothing can be more damaging than to ignore its library and to give a low priority. No new college, university or department should be opened unless adequate number of books is provided in the library.'

The commission found out that the condition of the academic libraries in universities was very bad. The commission also found that with the increasing enrolment of students in colleges and universities, more and more library services were needed. The academic libraries needed to cater to the information needs of a large number of students- under-graduates, post-graduates as well as research scholars and faculty members. The commission also found the need to offer documentation services in libraries so that the right information could be indexed and abstracted in less time.

The Kothari Commission laid emphasis on the following aspects related to academic libraries:

- Promoting self-study at the academic libraries.
- Facilitating easy accessibility of books.
- Extending working hours as well as increasing number of working days of the academic libraries.
- Maintaining multiple copies of text-books.
- Having a separate section for periodicals, research work and reference books.
- Developing reading skills.
- Improving library services.

The commission also stated that the UGC must allocate foreign exchange for academic libraries separately. However, the academic librarians were not too happy with the recommendations of the commission especially the ones related to the grants and funds. The state government also did not follow-up on the recommendations of the commission and did not provide adequate grants for the development and promotion of the academic libraries.

Mehrotra Committee, 1983

The UGC set up the Mehrotra Committee in 1983 to consider the revision of pay scale of librarians. The Mehrotra Committee in its reports discussed the functions of librarians in the field of library and information science and in facilitating the use of modern and innovative technologies in academic libraries. The committee suggested that librarians played an imperative role in imparting and disseminating knowledge and therefore needed to possess specific qualifications and also impart specific duties.

The committee recommended that the pay of the librarians of academic libraries must be revised at various levels at which they functioned and also as per the duties that they performed. The committee also recommended the promotion of academic librarians as and when required and also to improve facilities that could help the librarians add to their educational qualifications. The committee also discussed the qualifications that were required for the post of an academic librarian. It was made mandatory for librarians to have cleared the National

Eligibility Test to impart the necessary duties at the post. The committee also suggested the introduction of the concept of duty leave so that the academic librarians could attend workshops, seminars etc. that added to their knowledge and qualifications in some manner or the other. The government accepted all the recommendations of this committee and implemented revised qualification criteria as well as revised pay scale for all the academic librarians.

These recommendations were adopted by universities that were required to modify their norms for academic librarians as required. The minimum qualifications for the post of academic librarianship came into effect from January, 1986. Since then universities and colleges have been advertising for posts of academic librarians with revised pay scales and qualifications. In fact, till date, academic librarians are appointed and recruited based on the revised pay scales and qualification requirement of this committee.

Committee on National Network System for Universities/Libraries, 1988

In the Seventh Five Year Plan, the Planning Commission set up a Working Group on Modernisation of Library Services and Informatics. This working group suggested the development of a computer network inter-linking all special libraries in India by the year 2000.

The UGC constituted a committee on National Network System in 1988. The work of the committee was to suggest means and measures for networking of libraries and information centres in universities, deemed universities, institutions of research and development, institutions of national importance, UGC information centres as well as the colleges affiliated with universities. The aim of the committee was to enable sharing and optimal use of the available information and reference resources. The committee also aimed at developing a network to allow access to a wide range of literature and resources maintained across the various libraries and information centres.

The committee held its first meeting in April 1988 and constituted a working group to prepare a project report on Information and Library Network (INFLIBNET) within three months. INFLIBNET recognised the efforts that had already been made and being planned for modernisation of libraries and information centres and the developmental programmes of NISSAT, NIC, DESINET, ERNET, CALIBNET, DELNET and the CSIRNET. The Working Group covered in detail various aspects such as Output and Services, INFLIBNET Organisation, Standardisation for Information Handling, Application Software Requirements, Computer Hardware, Technical Specialisations, Network Manpower and Training Need, Management Mechanism, Implementation Mechanism and Cost Implications related to academic libraries.

To fulfil its objectives, the INFLIBNET does the following:

- Provides reliable access to document collection of libraries by creating an online union of resources from across various libraries in India.

- Provide access to bibliographic information like abstracts, citations etc. from across libraries by creating a gateway to access information databases.

- Enables users to access information regarding the books, monographs and non-book materials by locating the sources of the same.

INFLIBNET is involved in modernising and digitizing academic libraries all across the country by using state-of-the-art facilities to allow users to access information as and when required and make use of it in the most optimal manner.

Programs Implemented by UGC for Development and Promotion of Academic Libraries

The UGC has accepted the fact that it is important to have well-equipped and well-organised libraries in the country and has therefore accepted almost all recommendations of the various committees set up. The UGC also has undertaken and implemented several programs for the development and promotion of academic libraries of the country.

The following are a few programs that have been implemented by the UGC and the governments for the promotion and development of academic libraries:

- Wheat Loan Educational Exchange Program came into existence in 1951 when the American Congress passed a law under which a sum of $190,000,000 was granted to India to purchase wheat from America to relieve the food shortage in India. It was further specified in the law that a sum of $5,000,000 of interest accruing from the loans would be spent on the promotion of higher education in India by purchasing books, journals, scientific equipment etc. from America. Wheat Loan Funds were also used to equip and extend three libraries in Ludhiana, Madurai and Udaipur. This program led to the extension and improvement of several libraries in India.

- Book Banks was a scheme introduced by the UGC in 1963-64 to provide textbooks to the poor and the needy students for home study. The scheme was discontinued because there were gaps in the implementation of the scheme.

- In the Fourth Five Year Plans, the UGC planned the establishment of study centres with effective library services for the promotion of academic libraries in universities and colleges.

- The UGC established three National Information Service Centres (NISCs) and seven Inter-University Centres in specialised areas to provide improved access to information and bibliographic support to teachers and research scholars. They were set up in the existing universities and research institutes.

The UGC over the years has also taken several steps to improve the infrastructural facilities in the various libraries in the universities of India for the promotion of academic libraries and study and research centres.

There are several other national educational bodies in India that undertake several programs for the development and promotion of academic libraries in India. These include:

- All India Council for Technical Education promotes and works to improve the quality of technical education in India. It also undertakes several programs to improve the standard of academic libraries in India. The AICTE also provides several facilities in libraries like 500 books covering all topics in the syllabus, 25% books of the latest publications and also several other facilities in the libraries.

- National Council of Educational Research and Training or NCERT formulates and implements several plans and programs to develop academic libraries and improve their standard. The NCERT also provides financial assistance for the development of academic libraries in several colleges and universities.

- National Institute of Educational Planning and Administration takes initiative to achieve collective self-reliance among the developing countries by sharing of experiences and resources, exchange of expertise and information. It also conducts research and produce publications. The library of NIEPA has about 60,000 books besides a rich collection of reports of meetings and proceedings of national and international conferences organised by UN, UNESCO, UNICEF, OECD, ILO, etc.

- State Council of Educational Research and Training conducts in-service education and training programs for the teachers and faculty of schools, colleges and universities. It also provides several programs for librarians for their training to enhance their knowledge, education and competencies.

Check Your Progress

1. What is the main aim of academic libraries?

2. When were the first universities established in Indian cities during the British colonial period?

3. Why was the Mehrotra Committee set up?

3.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The main aim of academic libraries is to provide information and resources to the students as well as staff of colleges and universities and also to provide enough infrastructures that help the students and staff to use and evaluate the information.

2. It was in the year 1857 that universities were established in India in the cities of Madras, Calcutta and Bombay.

3. The UGC set up the Mehrotra Committee in 1983 to consider the revision of pay scale of librarians.

3.4 SUMMARY

- An academic library as we know is a library that is established in an institution of higher education like a college or a university.

- An academic library is established to serve colleges and universities, their students and also the staff.

- An academic library functions to provide a quite environment for reading, learning as well as researching on a wide range of subjects and topics.

- It is the function of an academic library to maintain all types of textbooks and handbooks related to the specific institution of higher education.

- In 1902, the Universities Commission first recommended the development of libraries so that the students could develop a habit of independent and intelligent reading.

- After independence, the Indian government undertook several measures to remodel the education system of India. The main aim was to achieve total literacy and independence of higher education system.

- As the single most important statutory and advisory body on higher education, the UGC has played an important role in the development, establishment and promotion of academic libraries in universities and affiliated colleges.

- To promote the establishment and development of academic libraries, the UGC has appointed several committees and commissions over the last several years. These include:
    - o The Library Committee, 1957.
    - o Review Committee on Library Science, 1961.
    - o The Education Commission, 1964-66.
    - o Mehrotra Committee, 1983.
    - o Committee on National Network System for Universities/Libraries (INFLIBNET), 1988.
    - o Curriculum Development Committee on Library and Information Science, 1990-93.

- In the Seventh Five Year Plan, the Planning Commission set up a Working Group on Modernisation of Library Services and Informatics. This working group suggested the development of a computer network inter-linking all special libraries in India by the year 2000.

- The UGC over the years has also taken several steps to improve the infrastructural facilities in the various libraries in the universities of India for the promotion of academic libraries and study and research centres.

3.5 KEY TERMS

- **Bibliographies:** They are a list of books, articles and other sources of information that form the literature of a subject.

- **Monographs:** They refer to a detailed written study of a single specialized subject or an aspect of it.

- **Faculty:** It is a group of related departments in some universities, or the people who work in them.

3.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. List some of the activities that academic libraries indulge in.

2. What was the Review Committee on Library Science, 1961?

3. Write a short-note on the programs implemented by the UGC for the development and promotion of academic libraries.

Long Answer Questions

1. What are academic libraries and why is it essential to promote them?

2. What is the role of UGC in promoting academic libraries in India? Discuss.

3. Describe how national educational bodies promote academic libraries in India.

3.7 FURTHER READINGS

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BLOCK - II
LIBRARY INFRASTRUCTURE

UNIT 4   AUTHORITIES, BUDGETING AND COLLECTION BUILDING

Structure

4.0   INTRODUCTION

In the previous unit, you learnt about the role of national bodies and commissions in promoting academic libraries in India. This unit will begin with a discussion on the organizational structure of academic libraries. It will then go on to discuss collection management of academic libraries. The process of building library collections is as old and as significant an issue as libraries themselves. Much time is spent in graduate library school programs discussing selection policies, censorship, new media, and collection maintenance. This unit will provide an overview of the same. The final section of the unit will discuss budgeting of academic libraries.

4.1   OBJECTIVES

After going through this unit, you will be able to:

- Discuss the organizational structure of libraries
- Explain the challenges in collection and management of e-journals
- Describe the difficulties in collection development in the digital age
- Examine library budgetary techniques and methods

4.2 AUTHORITIES IN UNIVERSITY/COLLEGE LIBRARIES

The statutory by-laws of the university govern its library, and the library system is subject to scrutiny and evaluation by its academic and executive councils. The various types of libraries and library systems are under the charge of the University Librarian of the university, a senior executive, who usually works directly under the University Vice-Chancellor. A Library Advisory Committee or a governing body makes the policy for all the activities and programmes of the university library system. This committee is usually chaired by the Vice-Chancellor or his nominee, with the Librarian as its member-secretary and convener. This Committee comprises some senior members of the university faculty, a few library and information science experts, representing professional interests, and a few scholars. The responsibilities of this Committee are to lay down guiding principles and policies on all matters concerning academic and administrative affairs of the library system, including preparation of the library budget, periodic evaluation of the programmes at services of the university library system and in general, to oversee the welfare of the library staff.

This Committee should be dedicated to foster a culture of inclusiveness by encouraging the sharing of ideas at all levels, communicating openly about activities of the library, and enabling collaboration and innovation in every possible sphere. Holding regular meetings, sharing minutes and the appointment of working groups as required to explore, implement and assess the efforts of the Committee are the core commitments of the Committee.

The Chief Librarian of the university library should have the complete responsibility to conduct the activities and programmes of the library in accordance with the principles and policies laid down by the Library Advisory Committee or the governing body. The Chief Librarian as a member of the Academic Council should intermingle with students, teachers, researchers and other members of the Academic Council to get adequate feedback to ensure an efficient management of the library system. In the University of Delhi, the University Librarian participates in Executive Council meetings as a special invitee. In IGNOU (Indira Gandhi National Open University), the Librarian is a member of the Academic Council.

The role description of the Chief Librarian at IIM Bangalore (IIMB) states that the Chief Librarian would need to do the following:

(i) Provide strategic direction and leadership in advancing the Institute's teaching and research mission through the adoption of emerging technologies and sound fiscal management. Library activities include leading the review, formulation and implementation of progressive library policies, practices, initiatives and processes to support the Institute's mission and goals, and meet its vision and objectives.

(ii) Ensure cost effectiveness in all aspects of library operations.

(iii) Generate innovative ideas; assume leadership in areas of acquisition, dissemination and preservation of knowledge; develop and implement a vision for the library in support of IIMB's strategic plan, and build a strong and effective team within the library; strengthen communication and information flow between the library and its constituents; and manage the library's multifaceted operations strategically.

(iv) Work towards building positive and compelling workplace culture at the IIMB library. This includes the Library Annexe, which will be opened in due course at IIMB's new campus.

(v) Supervise librarians, deputy librarians, assistant librarians, senior executives, and executives.

Structural Organization

The university library system, being a fairly large body, should perform its functions with judicious distribution of work among its staff. The following chart gives a general model of the structural organization of university libraries.
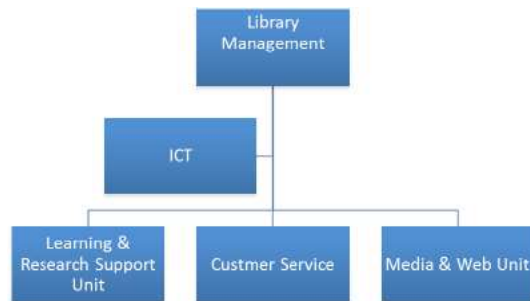
Fig. 4.1 *Structure of Academic Library*

4.3 COLLECTION BUILDING

The sole reason for students, teachers and researchers to visit a library depends on the kind of collection it harbours. The key obligation of any university library is to build up a sound collection of documents and other non-print materials, carefully geared to the academic needs of students and others involved in academic pursuits. Defining the best collection or measure, it is difficult as it is relative and subjective; however, the success of a library collection depends on how effectively it supports the actual and potential needs of users. Each library collection must be assessed at appropriate intervals.

User study techniques and methods have been developing in the last two or three decades that can assess the adequacy and potential of a university library. Some of the methods now being adopted are citation analysis for the selection and acquisition of current journals, analysis of library records on the use of the library, direct contact with users to obtain valid information on their information

gathering habits, and similar other types of studies that would give an insight into supporting libraries establish proper and uniquely relevant guidelines for acquisition.

Expert advice is the starting point of building a library collection. This is normally achieved by constituting book selection committees, wherein faculty members who have close contact with literature and current publishing are usually represented. These book selection committees are required to meet on a regular basis to ensure that the best pieces of information gets incorporated into the collection. The customary work of scanning selection sources, identifying items of interest and quality, and getting them approved by appropriate authorities should be systematically and smoothly planned and handled during an academic year. As the library is meeting the requirements of research of a large number of specialized projects, it is necessary to acquire relevant documents, such as government and official publications which include various types of reports, conference proceedings, thesis and dissertations, patents and standards, and similar others. Besides print materials, non-print materials, such as microforms, audio-visual kits, films, tape-slide kits, computer-based instructional materials, video-cassettes and such others should also be acquired.

Summarizing, the responsibilities of building up a worthwhile collection in a university library is a highly proficient, scholarly and professional responsibility. Indeed, the university library is rated high or low by the quality of collection it builds.

Technical Processing and Organization

Housing the extensive collection of library materials acquired is yet again an important activity. As the stock is likely to be used by students/teachers/researchers of different streams throughout the campus, they should be classified, using a system of classification that is acceptable to the user community and located at right places of use. They should be easily made accessible for anyone to use. The physical storage and filing of all documents, both print and non-print, must be simple to use. With the open access concept, being practiced by modern libraries, the concern for display and organization of the collection assumes great importance.

The catalogue of the library is a constantly used tool by users. Libraries should use standard practices of cataloguing, considering the multiple subject approaches of users for searching their relevant references. Computers are increasingly used for many of the house-keeping operations in libraries today. If computers are available in a library, they must be used effectively for cataloguing the collections and simplifying it for the users.

4.3.1 Collection Management: Methods and Problems

Identifying the need of a well-stocked and well-patronized library there is an understandably high desire of a distinct policy in relation to collection of library material which must be managed in a scientific way in order to make the right impact. The process of selection of library material therefore must be organized in

a specific manner in order to streamline it and ensure transparency in the process. Material available to the patrons of a library is in various forms, e.g., print or non-print and traditional or non-traditional formats. Let us at examine a general library materials selection policy which is practiced by all public libraries in general.

Responsibility for selection of material

The Library Board confers the duty of selecting the library material to the librarian-in-chief who in turn, may or may not delegate this power to other members of the library staff. In some cases, the librarian-in-chief has the availability of professional staff employed primarily for this purpose. The librarian himself or the members appointed by him carry on the selection process remaining strictly within the procedures and strategies laid down in the library material selection policy. All selection thus made are therefore considered Board selections, and the Board generally assumes complete legal accountability for all material thus selected.

General principles with respect to library material

(i) A public library must make available materials in all subject areas, in all possible formats, e.g., print, non-print, media, pictorial, CDs, DVDs, etc. The library must emphasize upon the intellectual and academic requirement of the local public in which it is situated. Besides this the selectors, while procuring the materials, must keep regional interest also in mind. This however does not mean that other material is to be excluded from the list; materials on all subjects must be collected with specific emphasis on that mentioned earlier.

(ii) Specific selection criteria include:

- Author's reputation

- Publisher's standing in the market

- Importance of the matter in relation to the region

- Assessments of appraisals and addition in stock bibliographies

- Cost

- Format

(iii) While all libraries generally prefer to keep works of recognized and well known authors. However, an endeavour should be made by the library selection board to recognize and obtain the works of evolving and not so popular authors, imaginative writers, storywriters, composers, and novelists, particularly with respect to local and regional writers.

(iv) In selecting library material the selection committee members of the library must be guided by (and not restricted), a variety of standing bibliographies and reviewing aids:

- Booklist

- Library Journal

- Publishers Weekly
- School Library Journal
- Area Newspapers and Magazines, e.g., Minnesota Reviews
- Public Library Core Collection Catalogues
- Specialized Bibliographies
- In addition, suggestions and requests from members of the public will be considered

Controversial materials

Understanding the wide-ranging and multi-cultured society and the ever changing needs of a multifarious and dynamic age, all libraries must select their materials from a comprehensive range of themes, interests, viewpoints, and palates. Some material may be liked by some patrons and other may be unpopular with others, but it must always be the endeavour of the library to always have the best and latest material on their shelves and in their data banks. Difference of opinions and debates are good and necessary for a free society to develop intellectually; therefore, a public library must never try to 'play safe' by removing any controversial material from its shelves. The general public has a right to pick and choose from the available variety, and that right must be made available to them at all costs. Any patron of the library having any kind of an objection to any particular material available in the library's collections must asked to communicate his/her concerns in writing and the matter should be handled according to the procedure laid out for dealing such situations and such material.

Children's materials

A public library must have materials available for children and for adults and the selection criteria for selection of children's material should also be based on the same principles as that for adults' material. A public library must endeavour to procure books and other superior quality media for children, but should not be done as would be done by parents. Children should have access to all kind of age appropriate material at their disposal when they visit the library. There should no restriction, whatsoever, to any kind of reading, listening, or viewing of any material worthy and attained within the guidelines of the library policy.

Media/Non-print materials

Media/non-print materials comprise items like DVDs, CDs, computer software, etc. There must be adequate availability of such material, on various subjects, in a public library which should have acquired in conformance with the material acquisition policies laid down by the library. Specific or academic libraries must acquire this material after consulting the teaching staff of all subjects. Selection of media/non-print materials should be done on the following basis:

- Taking into consideration, the variety of media available and its possible use in the library.

- The price of the media/non-print materials being considered for original purchase, replacement needs and addition to the existing collection.

- The type, cost (inclusive of maintenance expenditure) and quality of the paraphernalia needed to use the media

- The staff management or help needed for the using the media to its optimum in the library.

- The everyday difficulties related to circulation control, space necessities and storage settings.

More definitely, media/non-print materials being considered to be bought will be assessed on the following basis:

- General motive, range and readership/viewership

- Significance of the subject matter

- Suitability or durability of the material

- Quality of the production

- Recommendations of faculty after previewing the material (in case of academic libraries)

- Convenience of use

- Format and price

- Publisher's reputation

- Authoritativeness

Acquisition of E-Journals

E-Journals have gradually become the centre of R&D in modern times. Keeping this development in mind, most organizations related to the field of research and development, have started subscribing e-journals. The need of e-journal has been seen and felt in the growing realm of academic libraries also. The explosion of e-resources, network equipment, computer and web technology has expedited this progressive transformation. The number of superior e-journals has been on the rise rapidly and can take the role of an aide to print resources or progressively do the job of their substitutes. E-resources, indisputably, will keep on growing at a rapid speed but their older counterpart, i.e., the print substitute still remains the bigger favourite. That is primarily because the unstandardized format of these materials makes them dreary for libraries to manage. That is the reason why, in actuality many matters are still need to be resolved with respect to management of sociological, technological and legal, matters. These matters encompass a plethora of features for instance acquiring, accessing, restricting, patent, protection, software and the user interface. Acquisition of e-journals is not like the acquisition of printed chronicles.

Predefined techniques and strategies which were in vogue for print material, or print as well as e-form are applicable to e-formats. There is a need to be handled these forms in a separate manner. There is a requirement to formulate processes and techniques for the acquirement, accreditation, negotiations, order/ receipts, and control of serials on CD-ROMs, via web for e-journal, so that there can be effective institution and organization in place.

Selection of E-journals

Selection of e-journals is one among the foremost library functions in the field of library material collection. E-journals can be of various types, e.g., free and fee-based journal, it could involve purchasing a subscription or paying a license fee for accession of rights. With respect to library staff concerning the selection of e-journals is concerned, two methodologies fit the criteria: first is format based; and the other is subject based. In the format based methodology, the selection of electronic journals is done by separate staff having expertise in computerization and automated resources which is not the case in selection of regular library material. Contrary to this, in the subject based methodology electronic journals are selected by the same staff who undertake the collection of traditional library material, e.g., a history expert would be involved in selection of history e-journals a Chemistry expert would select the related e-journals and so on. Actually, a library should strike a middle path and make use of a mixed methodology integrating involvement of both, the subject expert as well as the automation specialists.

That is the reason why a three stage process is adopted by most libraries for the selection of e-journals. It is often difficult to identify e-journals due to a lack of good bibliographic control available on the net.

There are five particular acquisition functions with respect to acquisition of fee-based e-journals, such as follows:

  (i) Deciding the cost

 (ii) Mediating with the seller

(iii) Completion of the license contract

(iv) Encumbering the account

 (v) Record of the order

Acquisition of e-journals is done on two approaches:

 (i) Specific library approach: All libraries are different based on their material, users' needs, functioning methodology, financing sources, information processing, etc.

(ii) Groupings approach: In this a number of libraries, having similar needs, form a group to serviced by a commercial publisher with and continuous long supply of e-journals.

NOTES

Challenges in Collection and Management of E-Journals

Following are the challenges in collection and management of e-journals:

(a) **Difficulty in accessing e-journals:** Access of e-journals is not a simple task as it requires particular amount of technology, some access to vice publisher or aggregator, and creating awareness among patrons with respect to usage of e-journals. Managing access to e-journals is related to the organization and decisive strategies, legal regulations and technical clarifications. Management strategies concerning access to e-journals must contemplate upon confidentiality and liability related matters.

(b) **Costing:** E-journals are priced differently based on the vendor who is supplying or the publisher, as all have different selling strategies. People in the library responsible for subscribing or librarians must be wary of these variations between different pricing structures as these costing structures are always fluctuating. In the modern situation, users prefer accessing e-journals instead of owning them. Actually the most workable way of economizing the usage of e-journals is by congregating groups of libraries in order to afford easy and reasonable access to number of e-journals.

(c) **Difficulty in classification, cataloguing and indexing of e-journals:** All libraries must be sensitive towards emergent criteria related to classification and cataloguing of e-material. Constant efforts are being made to create an organization scheme as an instrument for automatic cataloguing and indexing. The quick growth in the presentation of e-journals has raised a range of some rudimentary cataloguing doubts. Many Internet services, for example, World Wide Web servers have threatened the very existence of serials librarians and forced them to review the customary definition features of serials, particularly with respect to citable matters and their descriptions. The disposal of numerous document setups has brought up doubts related to computer file additions and the number of catalogue records to represent them. The ambiguity regarding record of location and holdings has created doubts in mind of many institutions which are reluctant to include catalogue records for the Internet resources.

(d) **Metadata:** Metadata is a key to the functionality of the systems holding the content, enabling users to find items of interest, record essential information about them, and share that information with others. Metadata organizes the available information regarding library materials do that it becomes easy for patrons to locate digital information is available.

(e) **Problem of availability online:** Sometimes publishers are not able to make all issues of their e-journal accessible by electronic means. At the time of selection, however, it should be clarified by the library authorities to the publisher as to how many specific subscriptions are expected in a particular period of time.

(f) **Preparation and support of employees and patrons:** Due to the ever increasing number of e-journals being published and the availability of diverse refined search and retrieval capabilities are the need of the hour. Hence, it is mandatory that skilled people are employed in libraries and present employees must be given adequate amount of training for maximum benefit of the library patron.

(g) **Problem of archiving:** Archiving means preservation of e-journals for future use. The question that comes to fore is that who should be given the responsibility of archiving of e-journals? It could be either done by the publishers or by the libraries themselves or yet another option is of creating a shared archiving at national or district level and providing access to all libraries.

(h) **Licensing publishers and the issue of copyright law:** Keeping in view the problems faced by licensing publishers, license agreement was brought into force. Licensing agreement is a written contract between user and creator of the e-journal which is made keeping many things in mind, for example: specifically allowed use, ascertaining the limit of access, openness of the network, single or multiple uses.

(i) **The problem of copyright:** Copyright of electronic material is an undefined but in this, formation of an easily comprehended legal outline is required for the benefit of publishers and libraries.

Difficulties in Collection Development in Digital Age

The difficulty in collection development in the digital age are as follows:

(1) Difficulty in ascertaining a user-friendly environment

A user-friendly environment is of utmost significance for patrons of a library who are not very comfortable with electronic materials like e-journal. Setting up a wireless local area network popularly known as LAN in the library along with appropriate organization of material is a good way of solving the problem. Use of LAN enables patrons to access the LAN from anywhere within the library, they even have the option of exploring the e-journal with their own appliance like an iPad or PC.

(2) Difficulty of user training

Up gradation of the skills of the users is very important for effective utility e-journals. Generally all public libraries carry on with free user-training courses which are an effective way of training users for best utility.

(3) Difficulty of digital divide

Contemporary society sees a growing requirement of development of information skills at different places, for instance schools, universities, offices, railway stations and other areas of day to day life. While more and more people are making use of digital information in today's world yet, digital divide also seems to be increasing

with each passing day and the same needs to be narrowed down. This digital divide is not just limited to accessing technology, but also extends to frames and information seeking abilities. Thus, in order to accurately narrow down this digital divide, there is a need to broaden the range of skills we address.

(4) Difficulty of classification in libraries

A library classification means a structure used to code and organize library materials based on their subjects. It is a process which streamlines browsing of subject. In a digital library, classification of materials depends on a pre-defined arrangement which advances the precision of information retrieval to a large extent and permits users to go through the material on a subject wise basis.

(5) Difficulty of staff development approach

To greet the future effectively, libraries must give up their current status of static resource centres and move towards becoming energetic instruction centres and provide to their patrons, exploration and learning. In order to achieve this perfect state, many challenges need to be overcome. On the way to accomplishing required changes in opinion and consequences, cooperative planning need to be put into practice to improve upon the present capabilities of the staff members employed in libraries. By doing this, people will start valuing public libraries far more than they do now for academic purposes.

The arrival of digital libraries has been hindered with numerous characteristics like the development of suitable technologies, storage related problems, management of rights, etc. Digital libraries, and all technologies connected to them along with related problems, are still somewhere in their infant stage. There are a very limited number of completely established digital libraries in the entire world. Moreover, every country has a different concept of a digital library and it has even been defined in various ways. However, exploration on digital libraries till now has been centred on the vessels and channels, not much emphasis has been laid on contents. There is no doubt that in a mainly print based customary library background, obtaining the content is a comparatively easy task. But it is quite the contrary when it comes to digital libraries. The unpredictability of digital content by itself and the unpredictability of obtainability in itself is an ever growing problem in the field of digital libraries.

Important features while considering licensing for electronic resources

Contrary to print library material, electronic material cannot be bought straight away. This process normally requires a license contract to be made. The license must be revised from time to time in order to notify and maintain the process of evaluation, and also to safeguard the fact that it reveals the outlooks of the selector before purchase based on the information collected and evaluated till now. Whenever possible, a typical classical license agreement which defines the library's rights must be made in maintained for reference. The language of the contract must be clear and simple.

Though all countries have different rules and regulations related to digital licensing, however, the following considerations must be looked while instituting a license.

- Authorized users and sites
- Provision of course packages
- Technique of access
- Recognized records/self
- Payment as per view
- Archiving strategy and permanent
- View, download, and print
- Connecting facility
- Course assets
- Patron/User data
- Accountability for unofficial or unlawful use
- Inter library loan (ILL)
- Content uniformity
- Bibliographic data
- Process of notifications
- Beginning date
- System assimilation
- Procedural support
- Support to customers
- User-friendliness of the web browser
- Certification
- Certain up time
- Resource providers authority to provide access
- Cancellations
- Value for money
- Uniformity with print alike
- Availability
- Drop-out clause
- Payment terms and conditions
- Administrative laws
- Grace period

Check Your Progress

1. Who makes the policy for the activities and programmes of the university library system?

2. Define the term 'e-journal.'

3. What are the five particular acquisition functions with respect to acquisition of fee-based e-journals?

4.4 BUDGETING

A budget is a process that involves preparation and planning of the organization's monetary dealings, financial control and all related actions and processes. A formal presentation of the financial planning of an organization is called a budget. A budget is the written account of revenue and spending of the entire year. It includes all things of work which need to be implemented over a definite time period, sometime in the future. An all-inclusive budget, made keeping in mind the entire institution is also called as master budget. A library is an organization having an estimated and expected inflow and outflow in the entire year. By virtue of it being just an estimate, there is always lot of scope for alteration and changes. Financial budgets are usually made on yearly basis. A budget is the key feature of any library's financial management. In fact, this is a statement of the library's income and expenditure for the year. Besides, it also serves as a device to control, communicate, coordinate, evaluate and motivate.

Purposes of Library Budget

- The general intention behind library budgeting is to plan various stages of library processes.

- Organize events of library's numerous departments and to guarantee operative control on them.

Over and above this, libraries have some specific purposes also which are as follows:

- To forecast and envisage future services of the library.

- To forestall the future monetary condition of the library and its up-coming funds requirements in order to keep the library absolutely lively and up-to-date.

- Coordination of the endeavours of library's various departments for achievement of common goals.

- To enhance the competence of processes of different departments.

- To different departmental heads accountable for different jobs.

- To control library's funds in an effective manner.

Factors Affecting Budget

All libraries cannot follow a similar form of budgeting, every library's budget depends upon the following factors:

- Size of the library gatherings, number of employees
- Place or location
- Types of the library services being provided
- Types of patrons

Methods of Preparing a Library Budget

There are many methods of making a library budget, some of which are traditional and have been in use for a very long time, yet others are more innovative and recently adopted into library administration. Let us have a look at them:

1. ***Line by line item budget:*** While preparing line by line budgets, the objects of the payments are separated line by line, and divided into wide classifications like, books and periodicals, pays and grants, apparatus and other paraphernalia, eventualities etc. And these broad categories are further divided into sub-divisions.

2. ***Lump sum budget:*** In this kind of a budget preparation, a specific sum of money is allotted to the library. This gives the library the freedom to choose how to allocate that amount to different groupings.

3. ***Formula budget:*** In formula budget there is a provision of predetermined standards for allocating money to different departments. It is very easy to prepare this type of a budget.

4. ***Program me budget:*** A program me budget is not individualistic, rather, it is concentrated on the activities planned by the library.

5. ***Performance budget:*** This technique of preparing a budget is quite similar to programme budget it emphasizes upon performance instead of programmes.

6. ***Planning programming budgeting system:*** PPBS method is an ideal combination of both, program budget and performance budget, and is concentrated on planning.

7. ***Zero based budget:*** This method is based on the similar concept as PPBS but is only concentrated on present activities.

Costing Library Process, Functions and Services

The general notion amongst people is that the cost of establishing a running a library is always related the assigned budget, which gives the yearly distribution of particular amount of money for particular objectives. This budget can be called merely representative as, in most cases, the budget does not include numerous expenditures, like opportunity costs, due to the exigency of their nature.

Furthermore, a moderately novel concept called, "value maintenance," must be taken into consideration. Very few articles or writings deal with the costs involved in running a library, as most of them are focused operating budgets. Let us now have a look at the costing processes, functions and services in libraries.

Overall, public library budgets are very wide-ranging, as they function independently and ought to be accountable, for example, they include expenditures like, convenience services and cleaning costs, which are rarely included in a library budget. Some specific libraries at times do not prepare a direct budget, and thus the costs incurred by them are paid by their parent organizations from different sources. Budgets of some academic libraries sometimes include endowment for employee benefits, and in some other instances these are charged to a central fund. Whatever may be the style of a library budget, there will always be variations which make the estimation of total costs incurred in the library a very complicated issue, and nevertheless, it is vital to understand these costs.

- *Building and maintenance costs*

One of the most significant costs which is not generally indicated directly in library budget is that related to the building and its paraphernalia. Utility costs, heating or cooling systems, lighting, power etc. are some such examples which might have been made a part of the institutional budget, as an overhead expenditure. Owing to the huge size of libraries and their long functioning hours and tremendous numbers of visitors visiting their premises each day, there is no doubt in the fact that the costs of maintaining the buildings will be very high. Other costs related to maintenance of library buildings include:

- o Major and minor infrastructural repairs
- o Equipment and utilities maintenance costs
- o Sanitization and cleaning costs
- o Insurance, repayment of funding for new apparatus
- o Personnel security and safety costs
- o Calamity preparedness costs

- *Growth costs*

Like any other organization, it is only natural for a library to grow. Nevertheless it is not easy to predict the rate at which a library will grow. There have been some attempts in the past by various library managers to, kind of, control a library's growth in order to stabilize the size of a library. These efforts may bear fruits smaller libraries where the main requirement is to provide material only for teaching purposes, i.e., academic libraries and not research. In larger libraries, however, this may not be possible owing to the variety of needs and widespread clientele. Some libraries also have to bear transfer costs related to too much reliance on delivery of documents. The costs linked to ever changing infrastructure needs are rarely included in an existing budget.

• *Electronics and other hi-tech paraphernalia*

Modern-day libraries provide the service of long-distance electronic information transfer which costs heavily. The cost of provision of such a service generally ignores costs like the actual telecommunication cost, staff training costs, and the heavy costs incurred for installing the equipment. Usage costs, of equipment like telephones, recorders etc. have not yet appeared openly but it is certain that they will be developed soon sometime in the future either as an effort to monitor usage or for the purpose of cost recovery.

• *Cost recovery*

Although libraries are meant to be free facilities available for the use of all yet it has been pointed out by some scholars that this approach is rather misleading, because everything costs money and the grants merely suffice so extra expenditure has to be somehow managed, in order to maintain a particular standard. The question that however arises is that who should pay, and where will the money come from? Should all transactions made be charged overhead or should there be a provision for them through a central budget? There seems to have been some sort of ad hoc planning done by all libraries at their individual levels, by which they are able to muster money as and when possible.

Cost Benefit Analysis in Libraries

In the modern era, calculation and assessment in library management is of utmost importance. It is an open secret that all kinds of libraries are dealing with issues like quick increase of knowledge, literature explosion, price boom, mounting demand of users, different user needs and reducing budgets etc. To deal with these complications different ways and means are being adopted by librarians all over the world. In this period of declining monetary resources and growing requirements for accountability, libraries in the world face the test of demonstrating and enumerating their value to their fund resources and patrons. With respect to academic and special libraries, library managers ought to prove the worth of their library to the parent organization in order to safeguard the flow finances required for their functioning. As financial experts consider contending significances and assign restricted resources, they require tangible proof of how the library backs the strategic objectives of its parent institution. Other than this, they also require proof which helps them weigh the worth of new directions. Library managers and administrators take budgeting decisions concerning the library, hence they may be expected to prioritize their products and services focusing on the ones which prove to be most effective in fulfilling the mission of the parent organization.

Due to financial crunch, library managers take the help of management tools like Cost-Benefit Analysis (CBA) which prove worth of the collections and services being provided by the library and along with that they justify the expenses of the library. Usually every person make use of the CBA techniques (consciously or unconsciously) once in lifetime to making decisions. For instance if a person wants

to buy something, he will estimate the cost of that thing and then compare its cost with the benefits accruing from it. He will buy that thing if the benefits are more than the cost, and if otherwise he will not buy the item.

CBA is an essential characteristic of management which helps in taking decisions. In the process of CBA, total cost involved with respect to equipment, resources and manpower have to be considered along with the value of all the paybacks such as, economy of cash, labor and time needs to be calculated. If the benefits outweigh the complete cost, it means that the proposed system is appropriate and in case of the converse being true, it should be understood that the system is not appropriate. Thus, it is absolutely necessary to do a CBA in libraries rather than blindly adopting other methodologies. Library is a non-profit organization, so the cost and benefits of the activities done or service imparted there is not an easy task. There are innumerable intangible constituents which form a part of library's operations. To check the economic viability of the proposed project, the cost/benefit ratio it must be ascertained that the benefits are greater than all costs.

The Objectives of a Cost-Benefit Analysis (CBA)

- The main objective of cost-benefit analysis is to help decision makers in taking appropriate decisions by providing accurate information.
- It is helps in determining the selection of main projects to be undertaken.
- It maximizes the performance level by best possible application of resources.
- Determining whether specific alternatives have benefits more than the cost.
- Making service standards better.
- Enabling self-evaluation and self-actualization.
- Finding out whether alternative projects are socially lucrative or not.

Different methods of conducting cost-benefit analysis

Following are the different methods of carrying out Cost Benefit Analysis:

- Present Value Analysis
- Net Benefit Analysis
- Pay back Analysis
- Net Present Value
- Return on Investment (ROI)
- Internal Rate of Return (IRR)

Procedure for conducting CBA

A CBA entails the following steps to find out if a project is worthy or not.

1. Identification of the costs and benefits that will accrue from a particular library project or program.

2. Measurement of costs and benefits in same currency so that they are stated in same units which are comparable with possible substitute uses of incomes.

3. Inclusion of dimensions of time in the assessment, because rather than examining the costs and benefits of only the current economic year it is required to be judged for the complete life of the project.

4. Concluding if the first steps produce major social benefits.

Steps involved in determination of costs and benefits

1. Identification of costs and benefits of books and journals

2. Classification of different costs and benefits for analysis

3. Select an assessment method

4. Interpretation of the results of the analysis

5. Taking action

Classifications of costs and benefits

While processing a CBA it is very important to categorize costs & benefits of the project. They may be:

1. **Tangible or intangible:** Tangibility means the measurability of the costs or benefits. For example an expenditure of cash for a particular thing or activity is called a tangible cost; purchase of books and salaries of employees are examples of tangible costs. These can be easily identified and measured. On the other hand there are costs which though are known to be present but somehow it is difficult or impossible to measure their financial value for instance morale of the staff or reputation of the library image is intangible cost.

2. **Direct or indirect costs and benefits:** Purchase of library material is a direct cost as it can be accounted for directly. Expenditures like insurance, conservation, heat, air conditioning etc. though are tangible costs yet it is difficult to determine the proportion of each attributable to a particular activity so they are indirect costs

3. **Fixed or variable costs and benefits:** Some costs and benefits do not vary in spite of the usage of the system, these are called fixed costs, whereas variable costs keep changing and are incurred on a weekly or monthly basis.

Check Your Progress

4. What is a budget?

5. List an important cost that is generally not indicated directly in the library budget.

4.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. A Library Advisory Committee or a governing body makes the policy for all the activities and programmes of the university library system.

2. Electronic journals, also known as e-journals, and electronic serials, are scholarly journals or intellectual magazines that can be accessed via electronic transmission.

3. There are five particular acquisition functions with respect to acquisition of fee-based e-journals, such as follows:

    (i) Deciding the cost

    (ii) Mediating with the seller

    (iii) Completion of the license contract

    (iv) Encumbering the account

    (v) Record of the order

4. A budget is a process that involves preparation and planning of the organization's monetary dealings, financial control and all related actions and processes.

5. One of the most significant costs which is not generally indicated directly in library budget is that related to the building and its paraphernalia.

4.6 SUMMARY

- The statutory by-laws of the university govern its library, and the library system is subject to scrutiny and evaluation by its academic and executive councils.

- The various types of libraries and library systems are under the charge of the University Librarian of the university, a senior executive, who usually works directly under the University Vice-Chancellor.

- The Chief Librarian of the university library should have the complete responsibility to conduct the activities and programmes of the library in accordance with the principles and policies laid down by the Library Advisory Committee or the governing body.

- The university library system, being a fairly large body, should perform its functions with judicious distribution of work among its staff.

- The sole reason for students, teachers and researchers to visit a library depends on the kind of collection it harbours.

- Housing the extensive collection of library materials acquired is yet again an important activity. As the stock is likely to be used by students/teachers/

researchers of different streams throughout the campus, they should be classified, using a system of classification that is acceptable to the user community and located at right places of use.

- Identifying the need of a well-stocked and well-patronized library there is an understandably high desire of a distinct policy in relation to collection of library material which must be managed in a scientific way in order to make the right impact.

- The process of selection of library material therefore must be organized in a specific manner in order to streamline it and ensure transparency in the process.

- The Library Board confers the duty of selecting the library material to the librarian-in-chief who in turn, may or may not delegate this power to other members of the library staff.

- A public library must make available materials in all subject areas, in all possible formats, e.g., print, non-print, media, pictorial, CDs, DVDs, etc.

- A public library must have materials available for children as for adults and the selection criteria for selection of children's material should also be based on the same principles as that for adults' material.

- Media/non-print materials comprise items like DVDs, CDs, computer software, etc. There must be adequate availability of such material, on various subjects, in a public library which should have acquired in conformance with the material acquisition policies laid down by the library.

- E-Journals have gradually become the centre of R&D in modern times. Keeping this development in mind, most organizations related to the field of research and development, have started subscribing e-journals.

- The need of e-journal has been seen and felt in the growing realm of academic libraries also.

- Selection of e-journals is one among the foremost library functions in the field of library material collection.

- A budget is a process that involves preparation and planning of the organization's monetary dealings, financial control and all related actions and processes.

- There are many methods of making a library budget, some of which are traditional and have been in use for a very long time, yet others are more innovative and recently adopted into library administration.

- The general notion amongst people is that the cost of establishing a running a library is always related the assigned budget, which gives the yearly distribution of particular amount of money for particular objectives.

- In the modern era, calculation and assessment in library management is of utmost importance. It is an open secret that all kinds of libraries are dealing

with issues like quick increase of knowledge, literature explosion, price boom, mounting demand of users, different user needs and reducing budgets etc.

- Due to financial crunch, library managers take the help of management tools like Cost-Benefit Analysis (CBA) which prove worth of the collections and services being provided by the library and along with that they justify the expenses of the library.

4.7 KEY WORDS

- **Tangibility:** It means the measurability of the costs or benefits.

- **Budget:** It is the written account of revenue and spending of the entire year.

- **Metadata:** It is a key to the functionality of the systems holding the content, enabling users to find items of interest, record essential information about them, and share that information with others.

- **CBA:** Cost Benefit Analysis is a systematic approach to estimating the strengths and weaknesses of alternatives.

4.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Write a short-note on the Library Advisory Committee.
2. What is the role of the chief librarian?
3. What is the purpose of the library budget?
4. What is collection management?
5. What are the factors affecting the library budget?

Long Answer Questions

1. Describe cost-benefit analysis in libraries.
2. What are the methods of preparing a library budget? Discuss.
3. Examine the different types of costs included in a library budget.
4. Discuss the challenges in collection and management of e-journals.
5. Describe the difficulties in collection development in digital age.

4.9 FURTHER READINGS

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UNIT 5 OVERVIEW OF CENTRALIZATION AND DECENTRALIZATION OF UNIVERSITY LIBRARIES

Structure

5.0 Introduction
5.1 Objectives
5.2 Centralization and Decentralization of University Libraries
5.3 Merits and Demerits
5.4 Answers to Check Your Progress Questions
5.5 Summary
5.6 Key Words
5.7 Self Assessment Questions and Exercises
5.8 Further Readings

5.0 INTRODUCTION

An academic university is established in institutions wherein these libraries facilitate the education system. The aim of these libraries is to ensure that they contain enough information material so that they can meet the needs of the various users. To ensure that they function to achieve their aims and objectives, academic libraries need to be organized in a specific manner.

In many universities, academic universities work as a single entity wherein every aspect of the library is handled by a single administrative unit. Such libraries work on a centralized library organization. In some universities, a decentralized approach is used to organize libraries. In this approach, responsibilities are delegated and there exist several libraries in addition to one main library.

5.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss how university libraries are administered
- Describe centralization and decentralization in university libraries
- Examine the merits and demerits of centralization and decentralization of academic libraries

5.2 CENTRALIZATION AND DECENTRALIZATION OF UNIVERSITY LIBRARIES

Academic libraries or university libraries are the libraries that are established in universities and colleges to cater to higher education needs of students in India. University libraries serve as important centres wherein the students as well as faculty members carry out teaching, study, training as well as research. The academic libraries of colleges and universities ensure that they maintain enough collection of information resources that may be required by the users of the library. The academic libraries in general maintain a huge collection of books of all types, journals, reference books as well as other resource materials to satisfy the information needs of students as well as faculty.

Over the last few years, university and academic libraries have been promoted and improved upon. Academic libraries are provided with proper infrastructure and several facilities that ensure that students and faculty can access the required information in an easy manner. It has also been ensured that the libraries in universities and colleges are well-stocked with enough books and reference materials so that the information needs can be satisfied. Also, there has been an exponential growth in the number of students enrolling in colleges and universities and every effort is made to ensure that the information needs of all the students are met in the most effective manner.

With the increasing information requires, the administration and management of university libraries has also become tough and challenging. The university libraries not only need enough staff and personnel to manage the libraries, but also need a proper access system to ensure that the information can be located in an easy manner. One also needs to ensure that the libraries are equipped with the right type of technology that can aid information access and retrieval. The administration and management of university libraries needs to be done in the most effective and efficient manner to make sure that these are run to cater to as many users as possible at any given time.

Library organization is required for the following reasons:

- To ensure that the students and faculty acquire the right and relevant information.
- To create library facilities and learning environment that supports learning and research.
- To offer appropriate academic support to students as well as faculty.
- To create and provide tools that enable easy information access.
- To capture all essential content that may be created by the lecturers or professors.

- To maintain an archive of all types of reference resources that are very old but essential.

- To curate an institutional repository and database of information resources.

Library organization and management is influenced by various factors like:

- The growth in campus population and the manner in which the changes are taking place in the composition of universities.

- The changes taking place in higher education and its structure.

- The rising costs of studying in universities as well as the maintenance of the required infrastructure in universities.

- Changes taking place in the form and number of publications required to be maintained in university libraries.

- The need for increased university cooperation and coordination.

- The growth of professional knowledge and the increasing need of information and knowledge resources.

University libraries are organized either in a centralized manner or a decentralized manner. Centralization simply means that the university has one central library which caters to the information needs of all students and faculty. Decentralization, on the other hand, means that a university has several departmental libraries wherein the students and faculty can find the information resources as and when they require.

These two library organization models are very popular but there is always an on-going debate as to whether university libraries must be centralized or decentralized. Most librarians advocate a single central university library. There are many who believe that university libraries must work in a dispersed manner so as to effectively meet the information needs of all types of users.

When it comes to centralization and decentralization of libraries, there are four aspects that are considered. These include:

- Physical location

- Administrative control

- Processing

- Services

For instance, the Delhi University runs on a decentralized library organization system. The Delhi University Library System is a large system consisting of a Central Reference Library, Ratan Tata Library for Social Sciences, Arts Library, Science Library, South Campus Library and Faculty as well as departmental libraries. Each of these libraries has a separate administrative control system. In contrast, the Jawaharlal Nehru University Library is an example of complete centralization. The university has one university library that is centralized in all aspects including administration and control.

The centralization of university libraries can be described in terms of the above mentioned aspects in the following manner:

- **Physical location:** When the centralization of university libraries is talked about, we must know that in a centralized system, the university has only one library. The physical location of the university library in the centralized library organization is such that it is easily accessible by every student and faculty member. The centralized library is centrally located within the university campus so that it can be easily located as well.

- **Administrative control:** In a centralized university library, the administrative control lies with one person or a specific committee. In many universities that are not very huge, the administrative control lies with the chief librarian. The chief librarian takes all essential administrative decisions related to the library and may even appoint special members to help in the running of the library. The chief librarian is also given several powers to make sure that the library is run in the most efficient manner. In large university libraries, a specific library committee may be formed with the chief librarian as the head and other members to help the chief librarian to take administrative decisions. The library committee formulates all policies and programs that help in running the centralized library in the most efficient manner.

- **Processing:** The centralized university library centralizes all its processes and operations. In other words, all processes and operations in a centralized university library are carried out by a specific body of people at one place. The budget of the library, issue and re-issue of books, purchase of new books, and all other processes are managed centrally. The information technology tools and other techniques used for the processes are all present in the central library for use for processing the various operations of the library.

- **Services:** In a centralized university library, the services are provided in the central library itself. In university libraries, there are several services such as photo-copying, scanning, printing of pages, creating references and indexing, and so on, that may be required which are all provided in the central university itself. The library employs help personnel to help students and faculty to make use of the relevant services as and when required. Then students and staff do not have to go anywhere else to avail services required in a university library. The presence of all library services at a central place makes it easy for the users to access the information resources and use them in the most optimal manner.

There also exists partial centralization in some university libraries. In this type of library organization, there exists one main library with another small library that is set up to meet the specific information needs of the students and the faculty. In case of partial centralization, the main library has the entire hold in the sense that all the administrative and control functions are handled by the main library and its

personnel. The sundry small library is just present to take off the load of the main library and meet the information needs of the users. The main library is the one that holds all important books and resources and the sundry library may maintain a small collection of some reference resources. The sundry library has no decision making power and runs under the complete control of the main library and that is why this concept if referred to as partial centralization.

The decentralization of a university library is just the reverse of centralized library system. In a decentralized university library, the collection of books and other library resources is not present at a central location; rather it is distributed. A university library that has decentralized organization caters to the needs of all information seekers at different locations but the information seekers are granted access to all libraries. A decentralized university library is distributed in terms of all the aspects namely physical location, processing, services as well as administrative control.

A decentralized university library can be described in the following manner in terms of the aspects that influence library organization:

- **Physical location:** A decentralized system of university library typically means that there is a presence of more than one or two libraries. These libraries in the decentralized system are located at different places within the university campus. Information seekers need to know where a specific library is located before the right information can be obtained. The libraries may or may not be present at a central location.

- **Administrative control:** In a decentralized university library, the administrative control is also distributed or decentralized. This means that each library is controlled by a separate administrative head. Each library in a decentralized library system has its own chief librarian, a library committee if the need be and its own personnel to carry out the day to day activities of the library. Each library in a decentralized library organization takes its own administrative decisions irrespective of whether these decisions have an impact on the other libraries or not. In many cases, all administrative heads of the several libraries need to report to the dean or the chairperson. The various administrative heads of the libraries may even interact with each other or hold meetings periodically to update each other about the functioning of the libraries and even exchange notes on how to handle the administration of the libraries. This in fact helps the decentralized library organization to run in a smooth manner.

- **Processing:** When a university library runs on a decentralized basis, the processing for each library takes place in the specific library. The day to day processes of each library are carried out by the library personnel who are present to assist the information seekers. Each library has its own separate list of the to-do things and processes. The libraries do not interfere in the daily processing and activities of each other.

- **Services:** Every library in a decentralized university library offers services at its own end to the information seekers. Every library is equipped with the essential tools and equipment that aid information processing. The libraries make sure that all the basic services are available at all times to the users of the library. Each library has its own photocopying services, computer services, access services and any other service that is considered an essential part of the library organization.

When it comes to decentralization of a university library, there are several ways in which universities may set up their libraries. Some of these are described below:

- **Function:** Libraries in a university may be set up on the basis of their function. Here, it may be noted that the main function of all libraries is to provide the required information to the students, faculty and other information seekers. In case of decentralized set up of a university library, the libraries may be set up based on the departmental functions. The library may be divided into functional departments like acquisition, reference services, bibliography, stock maintenance, information and documentation services. Dividing libraries on the basis of departmental functions makes it easy to run the libraries. This type of decentralization allows the libraries to function in the right and efficient manner and also allows defining authority, responsibility and accountability. This type of decentralization also ensures that all the available library resources are utilised in the most optimal manner.

- **Users:** A university library that runs on the basis of decentralized organization may be divided on the basis of the users. A university may have a separate library that caters to the information needs of under-graduate students, a separate one for post graduate students and a library that may cater to the needs of the faculty members. In such a case, the libraries maintain information resources and materials that cater to the specific needs of the users. For instance, the library that caters to the needs of the faculty may maintain a large number of research resources since faculty members indulge in research work.

- **Subjects:** An academic library in a university may be set up on the basis of the subjects. In other words, in case of decentralized library organization, the libraries may be divided on the basis of the subjects that are taught in the university. For instance, a university may maintain separate libraries for social sciences, science, arts, history, and so on. Subject organization of university libraries meets the specific information needs of the students as well as the faculty. The students and the faculty can find the required information easily related to a specific subject. This type of organization not only saves time of the information seekers but also enables the resources to be maintained in a manner wherein it can be easily found, accessed and used.

- **Document kind:** In a decentralized library organization, university libraries may even be organized on the basis of the documents they maintain. For

instance, one library may maintain books and periodicals while there may be another library that maintains fiction and non-fiction books and yet another that maintains reference and resource materials. This way, users can easily find the specific information resources they are looking for in a short time period.

The decentralization of university libraries is a common practice in universities that have very large libraries so that the library system can function in a very effective and efficient manner. Decentralization helps the information seekers to easily locate the required information and also saves the time of the information seekers as all essential facilities and services are available in the various libraries of the university.

Check Your Progress

1. List two reasons why library organization is required.

2. Where are the processes and operations of a centralized university library carried out?

3. Where is the decentralization of university libraries a common practice?

5.3 MERITS AND DEMERITS

Centralized academic library as we know is the one that has a centralized organization wherein the university has one single library that caters to the information needs of all types of users. A centralized university library maintains a large collection of all necessary information resources at one place where the information can be accessed as and when required by the information seekers.

The following are the merits of a centralized university library:

- A centralized university library is a cost-effective library organization. Centralized university library means that all the books, processes, services, and so on, are available at one central location. This means that a single central library can be maintained in a very cost-effective manner. When books are maintained at a central library, it helps the university to avoid any type of cost involved in duplication of materials. One central library also means that all staff is present at the library and the staff can perform its duties in a more efficient and effective manner.

- It is easy to administer and control a centralized library. A centralized university library is administered and controlled by a single administrative head or a committee that takes all necessary decision related to the library. Also any administrative decision cannot be questioned and there are no conflicts in the running of the library. Centralized administration means that the university library can function in a very efficient manner.

- In a centralized university library, it is easy to perform all operations. The centralized library can ensure that the right type of staff and the right number of staff members are present in the library to carry out the necessary operations. In a centralized library, it is also easy to delegate operations to the personnel to ensure that operational efficiency can be attained.

- The presence of a centralized library makes available all necessary information resources at one place which means that when researching, it is easy for the information seeker to find, refer and use the information as required. The information seekers find information related to various disciplines at the same place and do not have to go here and there to find the information needed.

There are also a few demerits that are associated with centralized university library. These include:

- With a centralized library, all information resources are present at the same place. This means that when an information seeker wants to find specific information, the information seeker tends to spend a lot of time to find the information needed especially when the information resources are not indexed properly. In large universities, it may not be easy to visit the central library at all times to find the required information. A centralized university library may not offer ease of accessibility to the information seekers.

- It is not easy to make use of the information resources in a centralized university library. This is because a centralized university maintains a large collection of books and periodicals. This makes it difficult for the information seeker to find the right information by making use of the information resources. Also, for specific information, there exists several resources and a user may not be able to make use of the right information resources in the right manner making it tough for the information seeker to collect the right and relevant information.

- In a centralized university library, the library services may not always be readily available. A centralized organization means that there is only library that caters to all the needs of the information seekers and also offers all types of library services. This means that library services may always be in use and may not be available when needed by an information seeker. This may also mean that the information seeker may have to wait to make use of library services. The staff of the library may also be always busy catering to the users making them over-work and even tired. This may lead to inefficient library services.

- A centralized library system is the one where all the information resources are maintained and also all services are provided. This may mean that there is always burden on the main library to meet the information needs of all the users. This may lead to inefficient operation of the centralized library as the main library may always remain crowded.

A decentralized university library organization is the one that has many libraries that cater to the information needs of the users. In a decentralized university library, there exist many libraries that maintain information resources, books, reference materials, periodicals and journals. These libraries may maintain information resources to different subjects or there may be specific libraries that have information resources of specific subjects. The information seekers can make use of any library to find and use the required and relevant information.

The following are the merits of a decentralized library in a university:

- **Accessibility:** Decentralization of academic libraries makes it convenient for the information seekers to access the library. Decentralized libraries are convenient to access as and when required by the information seekers. In a decentralized library system, each library maintains books and information resources that can be made use of by the users. The libraries are usually set up on the basis of specific subject materials which make it very easy for the users to find the necessary and relevant information in an easy manner. Also in large campuses wherein there are many libraries, it is easy to access libraries as these are located at several different locations in the university campus. In large university campuses, having decentralized and small libraries is a great advantage as these can be used without the information seekers to go to the main library which may be located very far from a specific department or location of study. Having many libraries also saves time of the student, faculty as well as information seekers who may want to borrow a book or find some information.

- **Ease of use:** In a decentralized library organization, there are many libraries that have a collection of books and resource materials. This collection may be a small one or may be categorised on the basis of the various subjects making it easy for the information users to use the required information. When libraries exist in a decentralized organization, it is easy to index and categorise the various books and resources in the libraries. This means that the users can find the required information resource easily and in less time as compared to when the same information is accessed in one main or central library. The information seekers also are able to locate the required book or information resources without having to take the help of the library staff as the books and information resources are well-maintained in a categorical manner.

- **Library services:** In a decentralized library organization, it is very easy to make use of the various library services. The various libraries are equipped with all essential and necessary services that aid the use of information by the information seekers. The various libraries allow the use of these services in an easy and time-effective manner. Also, when decentralization of libraries takes place, the number of users of the library services gets divided thus not putting a burden on the main library. In fact, in a decentralized library organization, the library services can be made use of without the users having

to wait for the same. The personnel in the departmental or subject libraries are also familiar with the collection of information resources and library services and therefore can assist the information seekers in a better manner. This way, decentralized libraries are able to offer more efficient library services to the users.

- **No burden on the main library:** One of the main advantages of having a decentralized library organization system is that there is no burden on the main library. Every library in the decentralized system maintains books and information that the users require. Each library also has its own library services that the users can make use of. This means that information seekers can make use of any library to get the information and services without having to rush to then main library all the time. This renders the main library quiet and less crowded as compared to when there is just one central library.

The following are the demerits of a decentralized library organization in universities:

- **Cost:** The cost of running and maintaining several libraries in a decentralized organization of a university library is a lot. The various libraries need to be maintained in a proper manner so that the information resources and library services are available readily for use by the information seekers. In a decentralized library system, duplication is bound to take place as the same resource material may be required in every library. This means that extra cost is incurred in maintaining the same information resources. In a decentralized library system, the staff required is also more. Each library needs to have its own staff and support personnel to carry out the library functions. This means that more cost is incurred in recruiting and maintaining library staff.

- **Handicap to research:** The presence of information resources in several libraries in a decentralized university organization may lead to hindrance in the research process. This is because the nature of knowledge and research these days is inter-disciplinary and the students and faculty may do not visit the various libraries to get the required and relevant information. This means that research process is hampered because of the distribution of information resources and materials at different places within the campus.

- **Poor services:** In a decentralized system, though each library is equipped with library services, the standard of services may not be good. Each library may not have the required number of staff or may not have all services functioning in the required manner. This hampers the learning and research process of the students and the faculty members. Also then hours of service of various libraries may be different and the library may not be accessible when required.

- **Administrative problems:** It is difficult to manage decentralized library system. This is because there may be problems in coordination, cooperation and communication among the various libraries. The libraries run as

independent entities in the university and may not follow the instructions that are provided by the main academic library. In a decentralized university library, there is often a non-uniformity of functions and operations leading to several difficulties in managing the libraries in the right manner.

In large university libraries, centralization and decentralization may both be practiced depending upon the nature of the university, the number of library users, administration, the campus area as well as the information resources that a library needs to maintain.

Check Your Progress

4. How is a centralized university library administered?
5. List one advantage of a decentralized library organization.

5.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Two reasons why library organization is required is as follows:
   - To ensure that the students and faculty acquire the right and relevant information.
   - To create library facilities and learning environment that supports learning and research.

2. All processes and operations in a centralized university library are carried out by a specific body of people at one place.

3. The decentralization of university libraries is a common practice in universities that have very large libraries so that the library system can function in a very effective and efficient manner.

4. A centralized university library is administered and controlled by a single administrative head or a committee that takes all necessary decision related to the library.

5. One of the main advantages of having a decentralized library organization system is that there is no burden on the main library.

5.5 SUMMARY

- Academic libraries are provided with proper infrastructure and several facilities that ensure that students and faculty can access the required information in an easy manner.

- The university libraries not only need enough staff and personnel to manage the libraries, but also need a proper access system to ensure that the information can be located in an easy manner.

- University libraries are organized either in a centralized manner or a decentralized manner.

- Centralization simply means that the university has one central library which caters to the information needs of all students and faculty.

- Decentralization means that a university has several departmental libraries wherein the students and faculty can find the information resources as and when they require.

- When the centralization of university libraries is talked about, we must know that in a centralized system, the university has only one library.

- There also exists partial centralization in some university libraries. In this type of library organization, there exists one main library with another small library that is set up to meet the specific information needs of the students and the faculty.

- The decentralization of a university library is just the reverse of centralized library system. In a decentralized university library, the collection of books and other library resources is not present at a central location; rather it is distributed.

- A university library that has decentralized organization caters to the needs of all information seekers at different locations but the information seekers are granted access to all libraries.

- The decentralization of university libraries is a common practice in universities that have very large libraries so that the library system can function in a very effective and efficient manner.

- A centralized university library is a cost-effective library organization. Centralized university library means that all the books, processes, services, and so on, are available at one central location.

- A decentralized university library organization is the one that has many libraries that cater to the information needs of the users.

- It is not easy to make use of the information resources in a centralized university library. This is because a centralized university maintains a large collection of books and periodicals.

- In a decentralized university library, there exist many libraries that maintain information resources, books, reference materials, periodicals and journals.

- The presence of information resources in several libraries in a decentralized university organization may lead to hindrance in the research process.

5.6 KEY WORDS

- **Exponential Growth:** It refers to growth whose rate becomes ever more rapid in proportion to the growing total number or size.

- **Indexing:** It means the action or process of compiling an index.
- **Research Process:** It is a systematic process that focuses on being objective and gathering a multitude of information for analysis so that the researcher can come to a conclusion.

5.7 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What is library management and organization influenced by?
2. How does the Delhi University library system function?
3. Why is library organization essential for an academic library?
4. What are the advantages and disadvantages of having a centralized library organization?

Long Answer Questions

1. What is a centralized library system? Explain centralization with respect to the factors that influence library organization.
2. How can decentralization be achieved in university libraries?
3. Explain decentralized library organization.
4. Explain the merits and demerits of decentralized library organization.

5.8 FURTHER READINGS

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BLOCK - III
RESOURCE SHARING

UNIT 6 INTRODUCTION TO RESOURCE SHARING

Structure

6.0 INTRODUCTION

Given the way knowledge and its requirement has increased dramatically, all libraries cannot possibly cater to all sections of the academic population. In addition, due to lack of resources (space and manpower) along with journals becoming expensive, it is easier to organize and manage smaller resource centres while creating processes wherein students can use material from other libraries as part of a resource sharing programme. This calls for a better understanding of key resources available in different libraries which can effectively come together to provide greater breadth and depth of information to students.

There are several factors that have made resource sharing an important requirement. These factors include an unprecedented rise of published documents, rising cost of information sources, technical advances in information processing, information retrieval and dissemination. Another old resource sharing method is library cooperation. Several such examples of sharing are well known in the history of libraries. Libraries identified the need for sharing resources long back. In addition to creating inter-library loan or resource sharing practices, libraries have also begun considering sharing of resources in several other areas, which include but are not limited to cooperative acquisition, cooperative classification and cooperative cataloguing.

There is also a growing focus on temporary ownership of knowledge resources as opposed to permanent acquisition. This model has been criticized as temporary ownership does not seem to provide a long-term knowledge solution to students because it can only fulfil immediate needs. The advocates of the 'ownership paradigm' focus more on gathering information which can permanently reside as stores of knowledge, and further it reflects on the library as playing its part in planning and managing anticipated information needs of the students.

However, development of a cooperative model of resource sharing for libraries, and inter-library loan facilities can be a good solution to the problems of scarce resources, high monetary investment as well as long-term and short-term acquisition of knowledge resources. One of the aspects to keep in mind is that sharing of resources should be based on the principle of equivalency—that each library should be in a position to give and receive. This requires a more detailed cataloguing of material and the availability of such information in each of the libraries.

Inter-library loan facility is one such resource sharing activity that is preferred by most libraries. However, sharing of resources in traditional libraries can be seriously disrupted by issues caused by lack of communication between libraries. Some such issues include disinterest of the lending library, distances, language, time crunch, and so on. A technology based, computerized resource sharing system has the ability to help libraries surmount these issues. To ensure efficient sharing of resources, the participating libraries must work toward collecting a pool of resources on the shared basis and creating such services that enable efficient usage of the resources collected on the sharing basis.

Expanding the owned resources is equally important and at the core of the concept of resource sharing. When libraries decide to share resources, they must attempt to reduce duplication and then must focus on the choice of publications, which they agree to share, and later on their acquisitions. The efforts of the participating libraries in developing shared resources are then, simply, focused on two main tracks: rationalization and acquisition.

The print environment that existed until recently had certain limitations towards resource sharing, which are as follows:

(a) Open access to shared resource was not possible.

(b) Service was dependent upon library performance.

(c) Access to shared resource was at a high cost.

Very often, due to the traditional nature of operations or paucity of financial and manpower resources, the libraries are not fully equipped to meet the requirements of organizing and providing user services as is expected. User services are an important factor of the resource sharing facility. It is an important factor that determines the effectiveness of a library in providing access to the shared resources. We all know, however, that the advent of modern information technology has made it easier to share resources. The new technology has

revolutionized the information domain by providing many products and services that promise to change the key goals of library management and its operations. Two technologies that have revolutionized the library operations include computers and telecommunications.

In this unit, we will discuss information about resource sharing among libraries, the objectives of such activity, methods of organization and development, enhanced by the fundamentals of networking. We will also touch upon how modern libraries working with technologically advanced methods use the Library Resource Sharing Service. The unit also presents some case studies which are focused on developments taking place in India in the area of academics.

Many a time, the terms 'library cooperation', 'networking' and 'resource sharing' are used synonymously to refer to the joint endeavour of libraries to exchange information. We all are aware of the fact that the concept of resource sharing was practiced even before the technical advancements made it easier to share resources. Similarly, the library professionals were already well-aware of the concept of 'library cooperation'. However, keeping in view the vast possibilities offered by the technical advancements, the term has been revised to 'Resource Sharing', which is more appropriate as it signifies budgetary cost cutting, and this is an important goal of all library systems. Hence, sharing of resources has become an inevitability and is widely practiced across the world.

Networking involves sharing of information or resources through computers or laptops that are connected via telecommunication links. The networked libraries can transmit information or data. According to Smith and Parker, as quoted by Zhang (1990), 'Networking is more structured type of cooperation in which definite regions or areas or definite organizations are connected by electronic or other means to promote inter-library loaning of materials, in-service training and other sharing of resources.' It would not be wrong to say that the term 'networking' has replaced the terms 'library cooperation' and 'resource sharing' as they essentially mean the same. The only difference between the activities of the library cooperation and resource sharing, and networking lies in the technical application, which is used in case of networking to get the same results as were used earlier for library cooperation and resource sharing. Networking has become the key link in chain for coordination and dissemination of library resources.

6.1 OBJECTIVES

After going through this unit, you will be able to:

- Describe the concept of resource sharing
- Explain the need, objectives and functions of resource sharing
- Discuss the activities and services of INFLIBIT
- Discuss library networking in India

6.2 RESOURCE SHARING

An elaborate explanation provided by well-known author of *Resource Sharing in Libraries*, Allen Kent makes it simple for students to understand the meaning and significance of the concept of 'Resource Sharing'. As stated by Allen Kent, 'Resource sharing in libraries is defined as a mode of operation whereby 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. Secondly; the term 'Sharing' implies apportioning, allotting or contributing something that is owned to benefit others.'

This takes into account partnerships and networking for mutual benefit. Library resources mean not only print and non-print materials but human resources as well that can be shared in order to augment the quality of service. It should be kept in mind that resource sharing should not at any point adversely affect the objectives or interests of the individual libraries in the network. However, considerations that may call for minor adjustments with regard to methods of operation should surely be taken into account and managed.

The functioning of libraries has improved exponentially as a result of the extensive usage of information and communication technology (ICT). Due to the technical advancements, libraries now find it easy to search and produce research documents, and make them available to the virtual users within no time. ICT-enabled tools enable efficient sharing of resources through World Wide Web (WWW), Web OPACs (Online Public Access Catalogues), electronic formats, email, MARC, Z39.50 and digital libraries.

- **WWW:** As the name suggests, World Wide Web is a worldwide network of interlinked documents that are written using Hyper Text Markup Language (HTML). These documents are stored on Internet servers, and contain text, visuals (pictures and graphics) and other multimedia elements. HTML allows the Web pages to be interlinked.

- **Web OPACs:** OPAC stands for Online Public Access Catalogues that are accessible through WWW. OPACs are a replacement for printed catalogues and periodical lists that were used in the conventional libraries. Users use Web OPACs to search for the availability of material in other libraries, providing speediest response to the question of which resources are with which library.

- **Electronic Formats:** Users can use a variety of electronic formats which can easily be accessed across the Internet. HTML pages, Portable Document

Format (PDF) documents and Joint Photographic Experts Group (JPEG) files are just some examples of the data formats, including text and images, which can be easily transferred across the Internet.

- **E-mail:** Electronic mail or e-mail is a communication medium powered by Internet that enables users to communicate text and other data files in real time with other users. Depending on the type of network that the library has, the users can communicate locally and across the library. In some cases, e-mail is used as a close alternative to Web OPAC. Users can send a text message via email to check for the availability of a material with other libraries.

- **MARC:** MARC or Machine Readable Cataloguing is an international digital standard for usage and interpretation of bibliographic information. The standard enables the creation and dissemination of digital catalogues that can be used by libraries and library networks within the same country and between different countries. MARC standard has gained popularity and is widely used by libraries to ensure reliable cataloguing of data; the standard also facilitates ease of use of library automation systems that are available commercially. Additionally, the standard facilitates sharing of bibliographic resources and is designed to cut down the rework that may be required in case an automation system needs to be replaced by another automation system.

- **Z39.50:** This is a client-server protocol that is used in library systems to enable the users to query a remote library through an information retrieval system. It uses the software deployed in the local library system to receive results in the format of the local system. The protocol is often used to retrieve the search results of several sources simultaneously; the retrieved results can be integrated to provide intelligent solutions. This protocol saves time and effort of library personnel. Library of Congress suggests that this protocol must be the protocol and standard for resource sharing initiative.

- **Digital Libraries:** In a digital library, most and in some cases, all the resources of a library are made available and accessible in a virtual format. Digital libraries make it easy to share resources as it is easy to send and receive the documents in the electronic format. Some formats in which the digital libraries make the documents available are text, HTML, PDF or any other machine readable format. Digital libraries have a competitive edge as they are not only able to manage their resources more efficiently but also are at a greater advantage of expanding their user base. The digital libraries are able to transcend the physical boundaries and can support a wider user base at national and international level. Using these ICT tools, libraries can work with each other; network at a local, national and international level; and give users the benefit of ease and simplicity of information retrieval.

6.2.1 Need, Objectives and Functions

Networking for resource sharing among libraries has been in vogue for long in the developed countries. For example, the proliferation of library networks in the United States was first observed in mid 1960s. The US can boast of being the originator of library networking, and today, most libraries in all states are networked at both the regional and the national level. To provide access to a wider user base and in line with its other policies, the US Department of Education (DOE) is working toward the promotion of library networking at various levels. In addition to the regular federal grants that are available to the public and academic libraries, the US DOE is also providing specific incentives to libraries in the form of networking grants, and other grants to promote inter-library loan projects and automation and retro-conversion projects.

It is also well established that library resource sharing works well in the UK as well. The finest example of an efficient library resource sharing system at work can be seen at Birmingham Library Co-operative Maintenance Project (BLCMP). This project has 13 million bibliographic records of books, serials, music and other records. The project is a network of more than 60 libraries, which include public libraries, college libraries, university libraries, and national and special libraries. Because of a huge network of libraries, this project has a wider user base as compared to any individual conventional library and, therefore, its database and the catalogues have an access rate of above 90 per cent. Apart from other facilities, BLCMP provides EDI clearing house facility in about 15 to 25 libraries.

Likewise in Australia, the resource sharing methods have undergone exponential improvements. As many libraries are working on the collaborative mode, the traditional sharing methods have been replaced by catalogue cards and national databases.

Australian Bibliographical Network has been working to sustain, coordinate and preserve the national and various central bibliographic databases. Another model that deserves a special mention here is the Swedish model for resource sharing. This model is often referred to as Consortium Model; the model was developed as an effort to integrate the resources of six major technology and science libraries of Sweden.

While the countries in the developed world are busy integrating their efforts for resource sharing, the libraries in developing countries including those in India, Bangladesh and China are lagging behind when it comes to resource sharing and library cooperation. Lack of funds, knowledge and a conservative attitude toward sharing are often cited as the main challenges behind the dismal state of affairs in these countries. However, lately, there is an impetus to move forward as the expanse of knowledge sources available in a wide variety of formats, along with financial limitations has made it tough to cater to all the needs of their growing user base. Other challenges that exert the need for resource sharing result from the factors such as information expansion, the growing pressure on libraries to cut down on

their budgets, and wide range of user needs. These challenges make it difficult for libraries to sustain themselves with the age-old methods, and require them to collaborate with other libraries and adapt new technologies and methods to cater to the needs of user base.

Library personnel can provide better access to users by collaborating and partnering with other libraries with the aim to gain access to greater number of resources offered by other libraries. Such collaborative efforts enable the libraries to gain access to those resources that are beyond their budget but are solicited by their user base. These efforts work in the best interest of the sharing libraries as it makes maximum use of resources available with each other. It is a common knowledge that no matter how big a library is, it cannot cater to all the needs of its user base. To make optimum use of resources, it is best to lace the resources and services in a way that a common pool of resources can be made available to all libraries and all users of the libraries.

The pooling together of the knowledge resources of a group of libraries and maximizing the use of those knowledge resources result in providing maximum mutual benefit. Library cooperation can be achieved in many ways, such as cooperative acquisition, centralized cataloguing and inter-library loaning of resources. Loans between libraries enhanced the ability of the users to get the required material from a library other than their regular one. Access to knowledge within, between and among the libraries became the key objective of such information exchange. Certain reciprocation where each participant contributes in addition to receiving from others extends the scope of resource sharing among a group of libraries. Underlying this cooperation is a willingness and also the capability to make it available when students require the information.

During the 1950s and 1960s, efforts were initiated to formalize the concept of resource sharing primarily due to inadequate library budgets and an inordinate increase in the cost of books and subscription of periodicals.

Some positives of resource sharing partnerships amongst libraries include curtailing of the overall costs, cutting down the costs required to maintain duplicate information sources, enabling a wider user base to access a large number of information resources and developing specialized collection of information sources. Maximization of the availability of library materials and services at the minimal expense is the fundamental basis of such partnership. The idea is to create adequate and easy provision for access to information sources instead of possession and ownership, although ownership is partly present. All libraries cannot have everything but can surely make use of resources available with each-other is the basic premise of such a partnership.

Clarity on individual library policies is very critical for sharing of resources. A library should know what parts of its resources can be shared with ease and success, and which are proprietary for use of its direct members and students. Each library will have some books and journals which will remain exclusively for

its own clientele and cannot be lent out of the premises. Such resources will not be a part of the category of resources put out for resource sharing. In order for resource sharing to be enabling for network libraries, it is essential to have to agree on few of the issues mentioned below:

(i) Scope of material that can be shared – certain clear guidelines to ensure consistent acquisition of core holdings without duplication

(ii) Loan periods and renewal procedures – Processes for delivering materials and their timely return; bibliographic access to local holdings and on order and in-process records of the participant libraries

(iii) Payment for damaged materials and what is lost during transactions

(iv) Production of tools such as union catalogues with uniformity and standardization for bibliographic control; cooperative cataloguing or shared cataloguing; maintenance of up-to-date catalogues, and so on.

(v) Establishment of facilities for storing little used or discarded materials, their maintenance and use as and when required.

To have a successful and efficacious resource sharing concept, speed of all procedures should be ensured as well the procedures need to be positive for timely delivery and return of materials. There needs to adequately defined manner for bibliographic access to materials available locally and materials that can be available on order and also for records that are in-process pertaining to participant libraries. Facilities need to be set up for the purpose of storing material which is either discarded or is little used and the maintenance and use of such material when they might be needed. For all of these, technology may become useful tool.

After the requisite material gets located at another location, it is essential to find out if it is actually available, or it is being currently used by someone else. If resource sharing has to happen, availability of and access to information associated with circulation must be easily available to prevent disappointment as well as to speed up process of locating requisite material in associated library.

After this is achieved, the next step entails transfer of the physical material to the point of need. Resource sharing, therefore, involves establishing positive procedures for delivering materials, and for ensuring their return in a timely manner.

However, for resource sharing, we must also consider a number of institutional variables. One being the type of library, as the aims of public libraries are many times incompatible with school, academic, or special libraries. Therefore, it may not be effective to have detailed agreements to the full collections of each. It is most advisable to look for a library with similar objectives. Location can yet be another consideration for resource sharing keeping in mind the efficiency in transfer of materials. A small library should not look at a tie-up with a very large library unless there is an additional incentive provided for access to the better and comparatively extensive collection. Libraries that share resources should have some degree of equality in their offering to each other in their collaboration. In

addition to these considerations, if resource sharing is to be successful and effective, then all procedures must occur with as little time lag as possible so that the client has the desired material in hand before the need for it is evaporated.

Record keeping is an integral aspect of resource sharing systems as it is in individual libraries.

When libraries share material, it has to be done in a steady and formal manner, as it is important to operate the systems accordingly. To be streamlined first is the policy for acquisitions, which should be detailed out in writing as much as possible. This is important so that other members in the system can clearly expect whether other libraries will or will not acquire a certain item. The thought provided in the outlining of parameters for approval programmes may work as a feasible model for sharing material. Convenient real time access, to on-order/in-process records of resource sharing partners and to union catalogues of their holdings can applying standard policies to individual selections. Once a clear decision to acquire has been made, the local on-order and in-process files must be available to other members who may be making an acquisition decision to purchase duplicate materials. The same goes for access to information holdings as outlined by the catalogues of the member libraries. It is beneficial to study the likelihood of putting in place a combined catalogue for the member libraries and of keeping it up to date. The union catalogues whether individual or combined must contain indications of library location of material and also information on any limitations of use. The user who has identified material of interest to him must know whether it is available or is in circulation. In the latter case, the expected time of availability must be known so that a decision can be reached as to whether the delay is acceptable or whether the holdings of any member library should be used.

We can also say that the basic circulation files, therefore, need to be made available. Once the loan operation has been completed, methods to recall of material along with filing details should be put into place. If rules are put into place for fines or other disciplinary systems for late return, or non-return, then files and procedures must be set up accordingly. Capturing details of files and procedures mentioned above provides the library network the prospect for usage analysis of usage and to make effective decisions on withdrawal of materials to a shared storage facility.

With the considerations of data sharing about acquisitions, holdings, inter-library loan requests, and completed transactions and to share this data over various distant locations, technology comprising computers and telecommunications becomes critical in the design and operation of resource sharing systems for library networks. The basic records with this kind of data can be recorded in machine-readable forms to allow cheaper transactions to be concluded. It allows the means for ready analysis; and to reinforce, with steady and up-to-date data, decision processes that should definitely be made in different geographic locations. Today, we have available with us a range of computer devices, suitable for resource sharing

systems. It ranges from small and relatively cheaper computers (microcomputers) to more expensive large scale 'computer facilities available for data sharing. Library networks involved in resource sharing systems can utilize any or a combination of such computing devices for local automation requirements. However, libraries need to meticulously analyse what kind of equipment is required in order to ensure that the choices for local requirements and/or to support consortium, are compatible and sufficiently furnished.

In case a set of libraries are considering participating in a library network, the method would be boosted by telecommunications networks. In such circumstances, libraries must clearly distinguish between the promise and challenges that may be a result of such adoption of technology. Adherence standards among the libraries in a network will ensure success as standardization is a given imperative in a technology driven environment.

Over the last two decades, we have witnessed massive effect of information technology that has altered drastically their structure and the libraries outlook towards user services. As discussed earlier, there are various challenges that the present day libraries face—these challenges include efficient management of library space, catering to the development needs to staff because of changes to the library workspace and their evolved roles and responsibilities, sustaining the library performance while balancing the drastic cuts in the budgets. Digitization of libraries is in itself not enough to bring about a major change in the way libraries function. Apart from the technology aspect, the library personnel need to be groomed to perform new tasks and acquire new skills than were expected of them while working in the conventional or traditional libraries. They are required to make an effective use of technology to deal with issues at hand.

Libraries follow various examples of resource sharing networks. The resource sharing may happen at local, regional, national and international levels. In local resource sharing, several local libraries pool information sources by using a collated union catalogue. In regional sharing, regional libraries store and process information and provide services categorized in terms of broad subject areas. National sharing of resources utilizes a national union catalogue which is collated on a national basis; the libraries also provide services to users based on the national resources. Knowing about large extent of how resources can be effectively exploited and facilities can be used by participating libraries, it is credible to devise several models for crafting resource sharing programmes.

In the last two decades, India has witnessed a drastic change in the functioning of libraries owing to the information revolution and outreach of technology. While most libraries in India are reeling under financial crunch and are unable to subscribe to core journals, programmes like National Information System for Science and Technology (NISSAT) were initiated to improve the situation and the infrastructure of our libraries. To spearhead its efforts for development of library services, in the year 1986, NISSAT started the first project Calcutta Library Network

(CALIBNET) with an aim to connect a large number of local libraries for resource sharing. Later on, in 1988, Developing Library Network (DELNET) and several other initiatives were taken to promote resource sharing among libraries. University Grant Commission (UGC) also contributed to the realm by setting up Information and Library Network (INFLIBNET) in 1988.

Following this trend, various libraries in India have formed groups also referred to as consortia for resource sharing. For example, the astronomy libraries in India have formed a networked for information and resource sharing. The member libraries of this group includes Indian Institute of Astrophysics (IIA) Library, National Centre for Radio Astrophysics (NCRA) library, Inter-university Centre for Astronomy and Astrophysics (IUCAA) Library, Nizamiah Observatory (NO) Library, Raman Research Institute (RRI) Library, Physical Research Laboratory (PRL) Library, Uttar Pradesh State Observatory (UPSO) Library, Tata Institute of Fundamental Research (TIFR) Library. This consortium was formed with several objectives. Some of these objectives were effective resource sharing, quick access to documents, reduction of the information costs, and the ability to stay up-to-date with the latest developments in the domain. Apparently, Indian scholars contribute a lot to the different subjects of global importance. However, the libraries in India are unable to provide adequate representation to the research that is being carried on in India. This challenge can be resolved by linking up Indian databases for consortium activities.

Networking is indispensable in Indian scenario as over 70 per cent of the population lives in rural areas. Although some projects have been initiated to network libraries, a lot needs to be done to harvest the benefits from networking of our libraries. This not only needs to be tackled at the policy level but also at the operational level. Documentary information resources need to be developed to promote the development of technology, science, and economy.

However, this activity will have its merits as well as a few demerits. Some noteworthy merits of a library consortium are as follows:

- It promises an exhaustive collection of information resources.

- It will help us eliminate the duplication of core collection as well as journals.

- Resource sharing will help us cut down the cost of development of resource collection as the participating libraries will be able to share the resources efficiently.

- More informed decisions can be taken for collection development, the need for which can be gauged by understanding users' demands.

- More efficient use of resources will be possible as each library will be responsible for sharing their resources with other libraries.

- Resource sharing will become easier through the use of Internet as the resource sharing libraries will need to create and maintain databases.

A few demerits of a library consortium that may arise in Indian scenario are as follows:

- The central body may charge exorbitant contribution fees in the absence of any checks and measures to verify the actual costs involved in creating such consortia.

- There is a possibility of manipulation of funds, and to implement such a system, it may be advisable to have separate auditing bodies to verify the correct usage of funds.

- In the absence of competition in a consortium, it may be difficult to deal with the problems of bureaucracy.

Check Your Progress

1. What do you mean by library resources?
2. How can library personnel provide better access to users?
3. State some of the positives of resource sharing partnerships amongst libraries.
4. List the demerits of a library consortium.

6.3 NETWORKING

The geographical limits no longer pose a hindrance in accessing information in present times. Physical library resources have been taken over by the internet and can be accessed on-line. All activities and functions of the library can be done with the help of online access. It will not be wrong to say that networking in libraries has helped in integrating all the activities of the libraries. Libraries are able to undertake all their cooperative functions and sharing of resources with the help of the internet. In order to completely utilise the services of the library through the internet it is essential to have good internet connectivity so that local as well as international information can be accessed.

The library network has been clearly defined in the 1975 national program of "The National commission on Libraries and Information Sciences" in following words:

> "Two or more libraries or other organizations engaged in a common pattern of information exchange through communication for some functional purpose. A network usually consists of a formal arrangement whereby materials, information and services provided by a variety of libraries and other organizations are available to all potential users. Libraries may be different jurisdictions but must agree to serve one another on the same basis as each serves its own constituents. Computers and telecommunication may be among tools for facilitating communication among them."

Purpose of Networks

- Support resource sharing to happen between member libraries with the help of computer network

- Simplify and encourage distribution of documents

- Promote development of necessary collections

- Lessen excessive doubling of books and journals that are expensive

- Create centres for reference so that catalogue search can be monitored, and the process can be simplified.

- Maintaining of central on-line union catalogue for printed, non-printed and serials for all member libraries

- Facilitate searching and accessing of books creating specialised bibliographic database, serials and other materials.

- Creation of project databases with required information of institutions providing services of information through the internet

- Collaborate the networks of all the levels and keep information ready for usage by libraries and users

- Develop standardised procedure for functioning and processing of information.

Functions of Library Networks can be summarised in three broad areas, namely:

- Providing the users with information services

- Technical support to libraries that are members of the network

- Managing the administrative functions related to library networking.

Internet for Libraries

The primary task of a library is to provide prompt information to the user. In present times this task has become complex and is no longer limited to printed information in the books and journals. The information is not only available in different formats but at the same time it is stored at various locations. The libraries will not be able to provide information in the absence of networking. The Internet may be referred to system of networks which are interconnected with computers all over the world with the help of the Transmission Control Protocol or Internet Protocol. The development of Internet has helped in connecting computers anywhere in the world and helped in accessing of information. E-mail, Gopher, Telnet, File Transfer Protocol and World Wide Web are some of the tools which help the users to process and access the information. The WWW helps the integration of the remaining access tools and provides an extremely simple procedure through which information can be published as well as accessed in the computers and sent to different parts of the world. The documents of multimedia and hyper-text-links can also be stored on the computer and circulated anywhere in the

world. Any information that is available on the web may be accessed with the help of an internet connection from any corner of the world. This development of internet facilities is fully explored by information providing centres and libraries.

Library Networking and Resource Sharing in India

The development of library networking is provided in the report submitted by the working group of the planning commission; the report of the seventh five-year plan (1985-1990) mentions the extent of modernization of the services and informatics of libraries. The extent of developments has been mentioned in National Policy on Library and Information systems document of 1986. In AIU and the DSIR have been strongly supporting an integrated attitude towards networking and computerization in libraries.

The growth of Indian library networks can be realised by the efforts undertaken since the 1950s. The Scientific Policy resolution in 1958 permitted the selection of various committees which gave directives for looking into the issues of library networking. In the Ninth Five Year Plan the Working Group for libraries and informatics underlined the problems which were faced by the libraries due to lack of sufficient networking provisions in the libraries. As a result networking and the Internet facilities were made the focus. UGC, Department of Electronics, Department of Telecommunication, Planning Commission and several other Departments of Government were affianced for working towards establishing necessary networks. The National Information System for Science and Technology (NISSAT) has undertaken the task of computerisation of libraries in various institutes of the country. The efforts and steps taken by NISSAT, Planning Commission, University Grant Commission and several government organisations have helped in establishing networking and computerised systems in many libraries all over the country. Presently most of the libraries in India are supported by computers and networking system of some variety as a result they are able to develop databases and perform the functions of the library with the help of the computer system. Usually, the publication collections are used to build up the databases since other library documents take a longer time. This as it takes less time than for the other types of library documents. After this is done then a database of collection of books, reports, theses, standards, and other material is taken up. The Library Networking Centres are in the meantime are working on obtaining databases so that the user has availability of all the records. They arrange for this access via email or on internet with the help of a telephone network. Additionally, the networking centres work towards providing software which are common so that the database can be developed, and the services of the libraries can be computerised.

Identifying the significance and necessity for the optimal exploitation of accessible resources many libraries and information networks (LINs) have been developed in most parts of the country since the later part of 1980s. Some of the

networking systems in India are, The Information and Library Network (INFLIBNET); The Delhi Library Network (DELNET); BTIS, The Calcutta Library Network (CALIBNET); The Madras Library Network (MALIBNET); and there are many more.

6.3.1 Types of Networks

Different types of networks will be discussed in this section. These are as follows:

• **Client Server Based Networks**

In this system the clients are generally computers on the network which are functioned by individuals, they make alterations on the files having the received data and once the alterations are done the data files are sent back to the server for storing. The quality of this arrangement is that it processes very effectively specially on big networks with large number of machines. The clients are able to receive and send information at a very high speed and they do not have to wait for data. The network has full processing power that of an extremely powerful computer. Individuals are able to process several files with varied software separately without being affected by each other.

The single draw-back of this type of network is experienced once the server stops functioning, the complete network stops working.
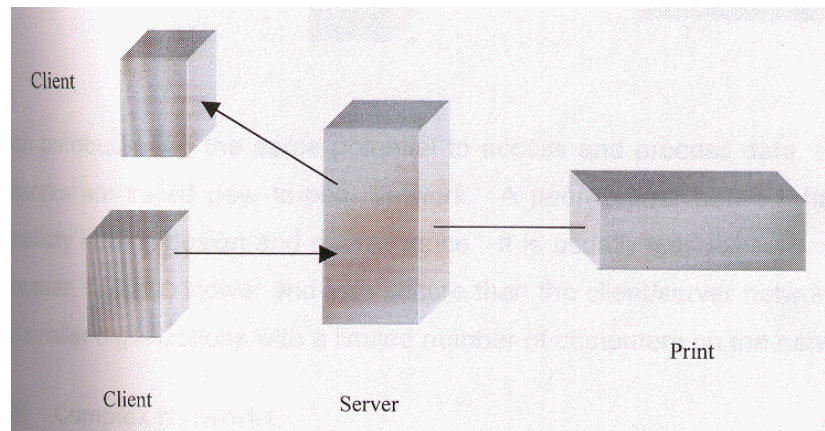
Fig. 6.1 *Client Server Based Networks*

• **Peer-to-Peer Network**

Every computer has the identical potential for accessing and processing data. Such types of networks are referred to as peer-to-peer network. This network has the quality of being simple in design as well as in maintaining. The network is generally cost effective as compared to others. The drawback of this network is its lack of speed and safety when compared with previous network. Because of these qualities this is suitable for small organisations as it will be not be efficient if it is attached to many computers at one time.
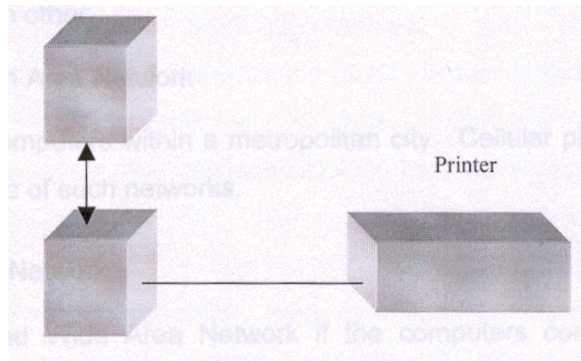
Fig. 6.2 Peer-to-Peer Network

- **Complex Networks**

This network may be joined with other networks and these networks may involve variety of machines from various sources, they all may have different mechanism of treating electronic information, need not be interpreted by rest of the network machines. The complex and intricate system is attached with distinctive software and hardware. These machines are referred to as bridges, routers and gateways, they execute task differently and translate information received in one way and supply it in a format which deciphered easily by the receiving machine

- **LAN, MAN, WAN**

The above networks are categorized as per their coverage areas geographically:

(i) Local Area Network (LAN)

When the computers of a network are positioned at a distance of less than one kilometre, close to each other, they may be in one building; computers of an office would use this network.

(ii) Metropolitan Area Network (MAN)

The computers of a metropolitan city are connected with the help of this network. Network providers of mobile phones fall under this category.

(iii) Wide Area Network (WAN)

The network which connects computers spread over a large area, these may be as close as thirty kilometres of each other or thirty thousand kilometres away. Some parts of this network are linked with the help of cables and some which are far are connected with help of microwave or satellite transmission. Usual WAN are the ones which are functioned by the telephone corporations. The widest and all-encompassing network is the Internet as it includes all three networks.

Types of Library Networks in India

In this section we will study the different of library networks in India. Let us begin by studying INFLIBNET.

INFLIBNET

INFLIBNET stands for Information and Library Network. It is an independent Inter-University Centre (IUC) functioning under University Grants Commission (UGC). The main function of the centre is to create effective infrastructure which enables the process of sharing library resources as well as the information between all institutions related to education and research. The working of INFLIBNET is collaborative with libraries of various universities of India. The purpose of the network centre is to develop the academic libraries as a hub for information.

Functions of INFLIBNET

- It promotes the computerization process in the libraries,
- Establishes standards,
- Generates union catalogue of thesis, serials, books, articles and other materials
- Accessibility of sources of bibliographic information
- Generates project, institutions and specialist databases

    We will discuss INFLIBNET in detail later on in the unit.

DELNET

DELNET stands for Delhi Library Network. In 1988 the project was initiated as a part of India International centre. In the beginning it had the financial backing of NISSAT. In 1992 it became an independent body and was formally listed as a society. Currently the activities of DELNET are backed by Planning Commission's NIC.

The primary function of DELNET is involved in promotion of resource sharing between all libraries within Delhi and in other parts of the country. In order to perform it primary function it develops a library network which stores and disseminates information. Coordinates efforts so that suitable collection can be developed, and duplication of resources can be avoided, offers the users services of automated information.

The members of DELNET include the libraries of several colleges and universities, along with departments of government. It helps them with all their technical requirements and assists them in creation and maintenance of databases of the bibliography, control over serials, preparations of the union catalogue, abstracting services, loaning facility, transferring of documents, photocopying services and above all provides databases of all levels. It has also created library software such as Software for libraries namely DELSEARCH and DEL-DOS have been created in helping the process of networking in libraries which will enable to access database and create new ones from different locations.

CSIR E-Journal Consortium

CSIR stands for Council of Scientific and Industrial Research. A consortium of CSIR has been formulated as well. As a result of the consortium National Institute of Science, Communication and Information Resources (NISCSIR) was established as an integral part CSIR. It was developed with the merging of INSDOC and NISCOM as a result it had several branches which supported the library networking in India. NISCAIR executed an agency to undertake the progression of supplying accessibility of all electronic journals present in different parts of the world to all the employees of CSIR. All this was done in order to enhance the research and advancement activities of CSIR.

The consortium has managed to achieve a lot in the field of networking of knowledge and communication.

CSIR E- Journals Consortium helps in providing electronical access to the employees of CSIR. They are able to access all the latest information of science and technology, developments in the field at minimal cost. This has been possible only because of the approach of the consortium. In order to provide the E-journals in 2002 CSIR signed a contract with Elsevier Science, under the terms of the contract it was able to access over 18000 journals. Remarkably, the laboratories of CSIR were jointly acquiring 550 printed journals from M/s Elsevier; the annual subscription was seven crores. But with the availability of e-journals in the same subscription they began to receive 1400 journals. CSIR is trying to rope in other providers as well as that their employees can have access to over 4500 international journals related to science and technology.

UGC-INFONET

UGC-INFONET is remodelling the campuses of Indian universities with latest comprehensive network which connects all the university and college libraries all over the country. It is a communication system which will function on national level. The consortium aims at providing e-journals to the universities which are its members with the help of the UGC-INFONET. The UGC-INFONET will be overlaid by infrastructure of ERNET. This will guarantee service of quality and maximum usage of resources of the bandwidth. INFLIBNET is going to execute the project on behalf of UGC. The funds for the project will be provided by UGC, as it has launched the project. The consortium aims at providing e-journals to the universities which are its members with the help of the UGC-INFONET. The consortium's objective is to encourage usage of electronic database and give complete access of journals to the community of education in all parts of India.

DAE Consortium

DAE Consortium stands for Department of Atomic Energy, which is a consortium developed to encourage scientific research.

Functions of DAE Consortium

- To encourage collaborations between scientists working and researching in DAE with professors of universities and various research institutions.

- The Consortium provides opportunity for the university students to work on projects which are essential for the country. They will be jointly guided by professors and the scientists.

- The Consortium helps in nurturing a healthy connection between the functioning of universities and the DAE research centre.

The project is jointly undertaken by UGC and the Atomic Energy Commission. The DAE consortium wants to encourage research work in not only their departments but also in other institutions and universities. They have the resources hence they are willing to provide facilities of the labs, library, workshops and other infrastructural requirements for research work to be conducted.

Check Your Progress

5. What is a client server-based network?

6. What is Local Area Network?

7. State one function of INFLIBNET.

6.4 ROLE OF INFLIBNET

Information and Library Network or INFLIBNET is an autonomous centre of the University Grants Commission (UGC). This national programme was initiated by UGC in 1991 and it is currently headquartered at Gujarat University Campus, Ahmedabad. Although, in the beginning, it was started as an IUCAA project, it soon developed as an independent inter-university centre in 1996.

INFLIBNET is focusing its efforts in developing the infrastructure and modernizing the university libraries with the purpose of information sharing among information centres and research and development institutions in India. It also aims to connect the information and research and development centres through a country-wide high-speed data network. The key objective of Information and Library Network or INFLIBNET is to promote communication among researchers and academicians in India. The association also focuses its efforts in achieving complete automation and computerization of information centres and libraries. This is done to provide access to national as well as international databases to support academic and research work and establish a communication network to inter-link libraries, academicians, and information centres. It is believed that this effort will enable maximum use of the resources available at the national level and will also contribute to developing the more advanced skills among the existing library staff as regular training programmes, seminars, workshops and conventions

will need to be conducted to heap the benefits of this association. This effort will be a major step toward the digitization of information resources and will provide hands-on experience to the existing library staff to run and manage digital libraries.

The objectives of this association are as follows:

- Promotion and establishment of communication facilities to develop new capability in information access and transfer. It will provide much-needed support to learning, research and academic activities by encouraging a spirit of cooperation and involvement of the concerned agencies.

- Collate efforts to establish a robust communication network by interlinking information centres and libraries in universities, deemed to be universities, UGC information centres, institutions of national importance, R&D (research and development) institutions, and colleges.

To fulfil these broad objectives, INFLIBNET is committed to:

- Promoting computerization of services and operations in the information centres and libraries.

- Developing standards and uniform guidelines for methods, techniques, procedures, computer software and hardware and encouraging the libraries to adopt these uniform standards. It is believed that this effort will optimize the use of resources to facilitate pooling, sharing and exchange of information.

- Developing a national network to inter-link various information centres and libraries in the country

- Providing reliable access to documents of libraries by creating an online union catalogue of serials, books, theses/dissertations and non-book materials.

- Facilitating access to bibliographic information sources with appropriate citations through the use of databases collated by the Information Centres of NISSAT, regional networks and such other organizations and associations.

- Creating gateways to provide online access to national and international databases.

- Developing novel techniques to archive information that is available as manuscripts and information documents in various Indian languages.

- Optimizing information resource utilization through shared cataloguing, collection development and inter-library loan service.

- Encouraging cooperation among libraries with the aim to benefit the weaker resource centres.

- Providing access to information to all users irrespective of their location.

- Creating databases of projects, specialists, and institutions to provide online information services.

- Developing human resources in the field of computerized library operations and networking.

- Facilitating communication amongst users through email, file transfer, and audio and video conferencing.

- Undertaking system design and studies in the field of communications, computer networking, and information handling and data management.

- Collaborating with libraries and other information centres within the country and abroad to achieve the objectives of the centre.

- Promoting research and development and other facilities to achieve the objectives of the centre.

- Providing consultancies and information services to generate revenue.

The major tasks and activities of INFLIBNET are library automation, database development, software development and provision of information services:

Library automation

1. Database Development: INFLIBNET is making focused efforts to create union databases of books, serials, experts, theses, and other projects. These databases can be accessed online.

2. Software development

3. Information services and networking

    (i) Bibliographic information services provided by INFLIBNET include:

- Online Database Access and Search
- CD-ROM
- Sewak
- OCLC's First Search
- COPSAT

    (ii) Document Delivery Services

    (iii) University Information System

    (iv) Networking of University Libraries

1. Library Automation

An important prerequisite for resource sharing and networking is the automation of libraries. INFLIBNET centre provides universities with the requisite support for such technology that may enable them to automate the library functions. This kind of support is provided in several phases. For example, in the years 1999–2000, INFLIBNET provided an initial grant to about 123 universities. Under this scheme, each library was provided a grant of ' 6.5 lakhs to enable them to develop infrastructure for automation. It was expected that by the end of 9th five-year plan period, the remaining universities would have also been automated. After the

systems have been installed, there is a provision for financial support for the first five years. The libraries that receive the grant are required to sign an MoU with INFLIBNET. An additional software called SOUL has been developed for the automation of in-house functions. So far, the software has been installed in 27 libraries and it has been functioning well for the designed purpose. Following the success of SOUL in the existing libraries, many other libraries have expressed interest in procuring SOUL.

2. Database Development

One of the core activities of INFLIBNET is the development of union databases. A total of eight databases have been developed so far and this number is continuously growing. The databases are related to books, serial holdings, experts, theses, research projects, current serials, secondary serials or CD-ROMs. These can be grouped under the following two categories.

Bibliographic Databases	Non-bibliographic Databases
Serials Holdings	Experts
Secondary Serials Catalogue	Research Projects
Current Serials	University Information System
Books	
Theses	

The bibliographic databases store the holdings of university libraries. The data for the university libraries is usually contributed by sharing libraries. In addition to serving as a resource sharing platform, these databases provide access to a large pool of information. In contrast, to promote communication among researchers and scholars, non-bibliographic databases are created.

3. Software Development

• Library Management Software

INFLIBNET has developed easy-to-use software named SOUL to automate the in-house functions of participating university libraries. The graphics user interface (GUI) software has been developed on client/server architecture. At the back-end, SOUL uses a robust RDBMS. The software has been designed to work on Windows and Windows NT environment and offers several new features of automation and library management.

- Utility Software: The utility software developed by the Centre can be made available to the universities on request. The utility software enables users to:

  o Search the data from union databases

  o Check for duplication of records

  o Generate catalogue cards

o Convert data from FoxPro and text files to ISO-2709 format

o Use a customized software for books, serials and theses

University libraries have a vast collection of materials and they serve the objective of providing services to a vast clientele. These libraries are often complex, and therefore, to function effectively and implement a wide range of operations, automation is indispensable. We are already aware that advancement in communication technologies has brought about drastic changes in how information is acquired, stored, processed, retrieved and shared. Considering recent developments in information and communication technology, INFLIBNET has developed a new library management software **SOUL**, for complete library automation. SOUL uses client-server architecture to provide extra capacity for storage, various levels of security, backup and storage facilities and multiple accesses to a database. This software has been designed after a thorough research of different library functions practiced in various university libraries. At the back-end, it uses MS-SQL Server 6.5 RDBMS. The user-friendly software comprises the following modules:

- Catalogue

- Acquisition

- OPAC

- Circulation

- Administration

- Serial Control

The software comes equipped with an in-built network feature that permits various libraries of a university to collaborate and share resources. The software also provides libraries with access to the distributed databases that may be installed at various university libraries. The users can access union catalogue using VSAT network.

Information network has been defined by UNISIST II as 'a set of interrelated information systems associated with communication facilities, which are co-operating through more or less formal agreements in order to jointly implement information handling operations with a view to pooling their resources and to offer better services to the users. They generally follow identical or compatible rules and procedures'.

A network of libraries is created when a few libraries and information centres have a shared goal towards exchange of information through computer and communication technology. A collective or cooperative purpose of linking members/users to the resources hosted on computers by means of telecommunication connections is considered to be a library network.

In the 1980s, post an incredible progress made by the developed countries in library resource sharing, it was felt that there is such a need in India as well to

create a network of libraries. Dr N. Seshagiri, who was the head of the Working Group of the planning commission on libraries and informatics, had recommended the need to modernize the library services in India. He also suggested the need to inter-link the existing library systems in the years 1985-1990. As a result, in 1985, NISSAT convened a meeting under the chairmanship of Director-General, CSIR to decide the course of action to modernize the library management system in India.

One of the recommendations of this meeting was the creation of a Science and Technology library in Calcutta and the advancement of automation and networking in the city. CMC Ltd. was commissioned by NISSAT to prepare the feasibility report on the CALIBNET. The report was completed and published in 1989.

Meanwhile, in January 1988, India International Centre, New Delhi along with NISSAT began the work on Delhi Library Network (DELNET) as a project commissioned by the Centre. In July 1992, DELNET got registered as a society under the Societies Registration Act, 1860. The recommendations of the Working Group on Modernization of Library Service and Informatics, once again, led by Dr Seshagiri paved the way for the establishment of INFLIBNET.

The INFLIBNET report was published in 1989. In 1991, INFLIBNET opened its office at Ahmedabad, and as soon as funds were provided under the Eighth Plan, INFLIBNET began its work. In the meantime, proposals were made regarding the establishment of more networks in cities including Chennai, Pune, Bombay and Bangalore. Therefore, besides CALIBNBT, DELNET and INFLIBNET, the library networks started in one form or the other in Bombay, Bangalore, Chennai, Pune and Ahmedabad.

Mission and Vision

- Leveraging on the latest technology, create a virtual network of people and resources in academic institutions with an aim to provide effective and efficient access to knowledge through perseverance, innovation and collaboration.

- Provide seamless, reliable and ubiquitous access to scholarly, peer-reviewed electronic resources to the academic community in all educational institutions with a focus on services and tools, processes and practices that support its effective use and increase value of this information.

- Build and strengthen ICT infrastructure in educational institutions with value-added services.

- Develop tools, techniques and procedures for secure and convenient access management enabling users to access information in electronic format from anywhere, anytime.

- Develop resource selection guides and online tutorials for effective delivery and usage of e-resources.

- Facilitate creation of open access digital repositories in every educational institutions for hosting educational and research contents created by these institutions.

Goals

- Automate the libraries in all major academic institutions.

- Impart training on the usage of applications.

- Provide universities the access to peer-reviewed research papers in electronic format.

- Digitize the legacy documents for preservation and preserve all the content in the electronic format; this may include theses, research articles, technical reports, concept paper, dissertations, annual reports and statistical data available in universities.

- Develop union catalogue of all documents that are available in libraries.

- Develop expertise in creation of digital content, management of digital repositories and digitization of processes.

- Set up digital repositories that have open access for users for hosting academic and research content.

Governance

The Governing Council (GC) and the Governing Board (GB) govern the centre. A subcommittee of the GB is the finance committee that is responsible for managing the financial aspects of the Centre.

The GC has three nominated members and seven ex-officio members. Since GC is an apex body of the centre, it is chaired by its President, who is the ex-officio Chairman of the UGC. The Director of INFLIBNET is the Member-Secretary of the Council. The GC has a total of 21 members and the members of the GB are also the members of the GC. The nominated members serve for a period of three years with the council.

GB directs, controls, and administers the affairs of the centre as per the rules and by-laws of the centre. The head of the GB is the Chairperson, who is an eminent academician in the relevant area. The chairperson, in turn, is appointed by the President of the council. Seven members of the GB are nominated by the Chairman of UGC. The GB also has six ex-officio members. The Director of INFLIBNET is the Member-Secretary of the GB.

A sub-committee of GB is the Finance Committee (FC). It consists of one nominated member and seven ex-officio members. The Administrative or the Accounts Officer of the centre is the non-member Secretary of the FC. The Chairman of the GB is also the Chairman of the FC. The FC recommends GB about the budget proposals of the centre, scrutinization of the audited accounts and replies to the annual audited report. It also recommends GB about approval

of sanctioned and additional positions and any other matter on which GB seeks its suggestion. The FC convenes at least once a year. The minutes of the committee, are reviewed by the GB and after its approval by the GB, the minutes are forwarded to the UGC for examination and release of grants.

Functional Groups:

- Access Management Group
- Database Management and R&D Group
- HRD
- E-Resource Management Group
- Open Access research and development Group
- Network and QC
- Web services research and development D Group
- Open Source Software
- Software research and development Group

The INFLIBNET has been awarded the following four awards:

- **Manthan South Asia Award 2010** for the project—National Library and Information Services Infrastructure for Scholarly Content (N-LIST) was handed over to the Director, Dr Jagdish Arora, and Scientist from INFLIBNET Centre, Mr Ashok Kumar Rai.

- **Jury Choice Award e-INDIA 2010** for the project—N-LIST was handed over to the Director, Dr Jagdish Arora and to the Scientist from INFLIBNET Centre, Mr Ashok Kumar Rai, during an e-India conference held in 2010, which was presided by Ms Agatha Sangma, Honourable Minister of State for Rural Development.

- **Jury Choice Award e-INDIA 2011** for the project—Shodhganga: a reservoir of Indian theses. The award was handed over to the Scientist from INFLIBNET Centre, Mr Manoj Kumar by Smt. Smriti Irani during an e-India conference held in 2011.

- **Digital Skoch Inclusion Award 2011** for the project—N-LIST was handed over to the Director, Dr Jagdish Arora and to the Scientist from INFLIBNET Centre, Mr Ashok Kumar Rai in a ceremony organized at New Delhi.

Check Your Progress

8. Name one of the core activities of INFLIBNET.
9. List the functions of the utility software.

6.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Library resources mean not only print and non-print materials but human resources as well that can be shared in order to augment the quality of service.

2. Library personnel can provide better access to users by collaborating and partnering with other libraries with the aim to gain access to greater number of resources offered by other libraries. Such collaborative efforts enable the libraries to gain access to those resources that are beyond their budget but are solicited by their user base.

3. Some positives of resource sharing partnerships amongst libraries include curtailing of the overall costs, cutting down the costs required to maintain duplicate information sources, enabling a wider user base to access a large number of information resources and developing specialized collection of information sources. Maximization of the availability of library materials and services at the minimal expense is the fundamental basis of such partnership.

4. A few demerits of a library consortium that may arise in Indian scenario are as follows:

   - The central body may charge exorbitant contribution fees in the absence of any checks and measures to verify the actual costs involved in creating such consortia.

   - There is a possibility of manipulation of funds, and to implement such a system, it may be advisable to have separate auditing bodies to verify the correct usage of funds.

   - In the absence of competition in a consortium, it may be difficult to deal with the problems of bureaucracy.

5. In client server-based networks, the clients are generally computers on the network which are functioned by individuals, they make alterations on the files having the received data and once the alterations are done the data files are sent back to the server for storing.

6. When the computers of a network are positioned at a distance of less than one kilometre, close to each other, they may be in one building; computers of an office would use Local Area Network (LAN).

7. INFLIBNET promotes the computerization process in the libraries.

8. One of the core activities of INFLIBNET is the development of union databases. A total of eight databases have been developed so far and this number is continuously growing. The databases are related to books, serial holdings, experts, theses, research projects, current serials, secondary serials or CD-ROMs.

9. The utility software enables users to:

- Search the data from union databases

- Check for duplication of records

- Generate catalogue cards

- Convert data from FoxPro and text files to ISO-2709 format

- Use a customized software for books, serials and theses

6.6 SUMMARY

- Library resources mean not only print and non-print materials but human resources as well that can be shared in order to augment the quality of service.

- The functioning of libraries has improved exponentially as a result of the extensive usage of information and communication technology (ICT).

- ICT-enabled tools enable efficient sharing of resources through World Wide Web (WWW), Web OPACs (Online Public Access Catalogues), electronic formats, email, MARC, Z39.50 and digital libraries.

- Networking for resource sharing among libraries has been in vogue for long in the developed countries. For example, the proliferation of library networks in the United States was first observed in mid 1960s.

- Library personnel can provide better access to users by collaborating and partnering with other libraries with the aim to gain access to greater number of resources offered by other libraries.

- Library cooperation can be achieved in many ways, such as cooperative acquisition, centralized cataloguing and inter-library loaning of resources.

- Some positives of resource sharing partnerships amongst libraries include curtailing of the overall costs, cutting down the costs required to maintain duplicate information sources, enabling a wider user base to access a large number of information resources and developing specialized collection of information sources.

- To have a successful and efficacious resource sharing concept, speed of all procedures should be ensured as well the procedures need to be positive for timely delivery and return of materials.

- Record keeping is an integral aspect of resource sharing systems as it is in individual libraries.

- With the considerations of data sharing about acquisitions, holdings, inter-library loan requests, and completed transactions and to share this data over various distant locations, technology comprising computers and telecommunications becomes critical in the design and operation of resource sharing systems for library networks.

- The geographical limits no longer pose a hindrance in accessing information in present times. Physical library resources have been taken over by the internet and can be accessed on-line.

- Libraries are able to undertake all their cooperative functions and sharing of resources with the help of the internet.

- The primary task of a library is to provide prompt information to the user.

- The development of library networking is provided in the report submitted by the working group of the planning commission; the report of the seventh five-year plan (1985-1990) mentions the extent of modernization of the services and informatics of libraries.

- The growth of Indian library networks can be realised by the efforts undertaken since the 1950s. The Scientific Policy resolution in 1958 permitted the selection of various committees which gave directives for looking into the issues of library networking.

- Identifying the significance and necessity for the optimal exploitation of accessible resources many libraries and information networks (LINs) have been developed in most parts of the country since the later part of 1980s.

- Information and Library Network or INFLIBNET is an autonomous centre of the University Grants Commission (UGC). This national programme was initiated by UGC in 1991 and it is currently headquartered at Gujarat University Campus, Ahmedabad.

- The major tasks and activities of INFLIBNET are library automation, database development, software development and provision of information services.

- INFLIBNET has developed easy-to-use software named SOUL to automate the in-house functions of participating university libraries. The graphics user interface (GUI) software has been developed on client/server architecture.

6.7   KEY WORDS

- **Network:** It is a collection of computers with telecommunication links which allows the resources of each participating machine to be showed by each of the other computer. If such a network is used for sharing library sources, it is known as Library Resource Sharing Network.

- **OPAC:** On line Public Access Catalogue is a catalogue system that is stored in machine-readable form and which can be accessed online by the library clients.

- **Resource Sharing:** It is a sort of agreement amongst participating libraries wherein each participant is willing to spare its resources with other members and, in turn, it is privileged to share the resources of other participant members as and when the need arises.

- **Internet:** It is a global computer network providing a variety of information and communication facilities, consisting of interconnected networks using standardized communication protocols.

- **Networking:** It means to interact with others to exchange information and develop professional or social contacts.

6.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Briefly describe the functions of the ICT-enabled tools that helps in efficient sharing of resources.
2. Write a short note on library resource sharing in various developed and developing countries.
3. List the purpose and functions of library networks.
4. Write a short note on internet for libraries.
5. Give a brief background on library networking and resource sharing in India.

Long Answer Questions

1. Explain the concept of resource sharing in libraries.
2. Discuss the need, objectives and functions of resource sharing.
3. Describe the activities and services of INFLIBIT in detail.
4. Describe the below mentioned types networks in detail:
    (a) Client Server Based Networks
    (b) Peer-to-Peer Network
    (c) Complex Networks
    (d) LAN, MAN, WAN
5. Explain the various library networks operating in India in detail.

6.9 FURTHER READINGS

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NOTES

UNIT 7   USERS AND USER NEEDS IN AN ACADEMIC LIBRARY

Structure

7.0 Introduction
7.1 Objectives
7.2 Academic Libraries: Types of Users
7.3 Information Needs of Users
7.4 Answers to Check Your Progress Questions
7.5 Summary
7.6 Key Words
7.7 Self Assessment Questions and Exercises
7.8 Further Readings

7.0   INTRODUCTION

Academic libraries are libraries that are an integral part of educational institutions. These libraries maintain several types of information sources so that the information needs of all types of users can be met. The users of an academic library typically consist of students and faculty members. Each of these users has different information needs that are taken care of and catered to by the academic library. The academic library ensures that it has enough material, staff as well as equipment that can aid the students and faculty to find the right and most relevant information. This unit will discuss user needs in an academic library.

7.1   OBJECTIVES

After going through this unit, you will be able to:

- Discuss different types of academic libraries

- Describe the users of academic libraries

- Examine the information needs of different users of an academic library

- Explain the ways in which an academic library meets the information needs of users

7.2   ACADEMIC LIBRARIES: TYPES OF USERS

Academic libraries are the libraries that are set up in academic institutions. These libraries cater to the information needs of students and faculty members of schools, colleges and universities. Academic libraries further the learning process with an

aim to develop and increase the knowledge base of the users. Academic libraries build and maintain a collection of books, periodicals, reference materials, and several information resources. Academic libraries also offer several library services like documentation services, reading facilities as well as lending and reference services.

Academic libraries are set up in academic institutions with the following objectives and aims:

- To serve the needs of academic community.

- To collect, store and maintain all types of reading, reference and information sources and materials.

- To provide reading services and reading areas to the users of the library.

- To offer lending services so that the students, faculty as well as other users can find the required information as and when required.

- To provide documentation and information services as and when needed.

- To provide an environment that furthers the process of learning, teaching and research.

Academic libraries on the basis of their institution of establishment can be divided into schools libraries, college libraries and university libraries.

School libraries are academic libraries that are established in schools. The idea behind having school libraries in primary, middle and secondary school levels is to aid the teaching and learning process with information that is not available in text books. The academic school libraries help the students as well as school teachers to find relevant and required information as and when required. For school libraries, it is essential to maintain a stock of teaching and learning materials. It is also essential that the information material in school libraries be categorised in a manner wherein the information can be located and used easily. School libraries also need to have trained and efficient staff that can assist students and teachers in finding and using information.

The objectives of a school academic library include:

- Foster reading interest among students.

- Promote reading habits among students.

- Inculcate communication skills and develop these in students.

- Aid teachers with teaching material so that student learning can be effective.

- Provide information materials to satisfy the curiosity of the students.

Schools library services include reading, lending, reference and guiding and advisory services. School libraries need to be set up in a manner to ensure that an environment is created that furthers the learning and reading activities of the students.

College libraries are the libraries that are established in college campuses to meet the information needs of students of the college as well as the faculty members.

For college libraries, it is essential to have a stock of all possible information resources since the college students depend on the college libraries to develop a habit of self-learning and self-study.

A college library is set up to aid study, learning and research processes for the students as well as faculty members. A college library must also provide the latest editions of all information and reference sources so that the students get the latest and updated information related to a specific subject or research project. A college library also needs to have a large collection of books related to all possible subjects that can be taught in the college. A college library also needs to subscribe to newspapers, periodicals, journals, travelogues, art books, and so on, which may be required by the students or faculty members. A college library also needs to maintain a collection of previous years question papers for the reference of students as well as faculty members.

The objectives of a college library include:

- Guide students to self-learn.
- Prepare students for shouldering other responsibilities.
- Expand the knowledge base of the students.
- Prepare students for varied professions.
- Assist faculty members in preparing right teaching and learning materials.

College libraries offer a wide range of services that include:

- Lending, reading and textbook services.
- Locating the right type of information material and utilise it in the most optimal manner.
- Information, reference and referral services.
- Display all books in a categorised manner.
- Provide enough equipment to assist students and faculty in finding and using the right information in the right manner.

University libraries are the libraries that are established in universities. A university library is maintained and administered in a university to assist it in the five major functions- teaching and learning, research, generating new knowledge, dissemination and publication of research projects and also conserve knowledge for use by the information seekers. University libraries cater to the information needs of a large group of users and therefore need to maintain a very large collection of information resources.

A university library must store, preserve and maintain all information resources in a categorical manner so that it can be found and used easily by the information seekers. It is important for a university library to offer library services of various types so that the users find it easy to make use of these services.

The objectives of a university library include:

- Conserving knowledge for use.

- Guide research work in all areas and subjects.

- Prepare the students as professionals.

- Aid faculty members in research process so that they can expand their knowledge base.

- Support the university in achieving its aims and mission.

A university library also offers several services to the users. These include:

- Lending and reading services.

- Reference and information services.

- Assistance in locating information and using the library services.

- Library orientation services.

- Reprographic services.

- Reservation of documents.

- Maintenance of newspaper clippings and special displays.

- Maintain files containing questions papers of previous years, prospectuses, reports as well as pamphlets for reference and use.

- Conduct seminars, workshops, special lectures etc. for the students as well as faculty members.

- Maintain a large collection of books, journals, periodicals, scholarly publications etc.

A university library is maintained and managed by a chief Librarian who is responsible for the efficient and effective functioning of a university library. A university library is run on specific guidelines and norms that are specified by the UGC. It is mandatory for every university library to run on a fixed budget and ensure that the information needs of all users are catered to in every possible manner.

Academic libraries are set up with an aim to meet the information needs of a diverse and complex group of users. These users of academic libraries use these to find required information and make use of it in an optimal manner. The users of an academic library also make use of the various library services that are made available in the libraries to assist the users in every possible manner.

The users of an academic library in school libraries are mainly the students and teachers who use the information materials to aid the learning and teaching process. In college libraries, the users of an academic library are the students of various courses and the faculty members who use the library materials for teaching, learning and research. In a university library, in addition to students and faculty members, there are many other users of the library.

In general, the users of an academic library include the following:

- **Students:** Students are the primary users of an academic library. Undergraduates and post-graduate students in colleges and universities visit the academic libraries to collect information to aid their learning process. They also make use of research materials to work on their research projects. Students tend to spend a lot of time in the library depending on the nature of information they require. The students are also the ones who make use of the library services the most. In addition, students need the assistance of library staff in locating the right information. The students who visit the academic library and make use of the information resources have different behavioural abilities. This is because the student behaviour in libraries is influenced by the following factors:

   o **Search skills:** Students who have good search skills can locate information in an academic library easily as compared to students who do not possess the basic search skills.

   o **Familiarity with library organization:** Students who are familiar with the library organization and who visit the library on a regular basis can find and use information in a more optimal manner as compared to those students who do not know about how the academic library is set up.

   o **Familiarity with the use of library sources and services:** It is essential that students know how to make use of the library sources as well as services to use the information in the most relevant and optimal manner. When students do not know how the library resources and services are to be used, they often fail to make use of the right information resources.

Based on the way in which students make use of the academic library, its information resources and services, the students are often categorised into the following:

- **Ineffective library users:** These are the students who may visit the academic library on a day to day basis but do not have any knowledge of library organization and search skills. These users visit the library because they have the readiness to search for information but are unable to find the required and relevant information that can be of use.

- **Effective library users:** Effective library users are the students who know how an academic library is organized and how library information materials and other library services are made use of. These users spend a lot of time in the academic libraries mainly because they want to find the most relevant information from the various information resources present in the library.

- **Ineffective but positive library users:** These are the students who lack searching skills but are able to find the relevant information through library assistance. These library users are the ones who often visit the library and

ask help from the library staff to locate and use the required information. These students also use the traditional methods of retrieving information because they lack the knowledge to make use of new and improved searching and indexing techniques.

- **Self-sufficient users:** These are the users who are well-versed with how the library functions and where to locate the required information. These students do not need the help of the library staff and spend a lot of their time in the academic library. These student users of an academic library search in-depth for the required information and use the library services on their own to use the information in the most optimal manner.

In addition to the students studying in the colleges and universities, there are prospective students as well who may visit the academic library to know about the college or university before getting admission in the same. These students visit the academic library to get oriented with the college or the university. Sometimes, the alumni or the students who have passed out from the colleges or universities may also visit the academic library to find information that they may need in their professional careers or for higher studies that they are pursuing. Academic libraries are always open to such students to cater to their information needs.

- **Faculty members:** An academic library is also used by the faculty members who teach in the colleges and universities. These faculty members use the information materials to assist their teaching methods and to ensure that the information being provided to the students is right, updated and accurate. The faculty members often refer to books that provide information not available in the prescribed textbooks. The faculty members use the library information resources to widen their knowledge and to be assured of the facts they are teaching. There are also visiting faculty members who may make use of the academic library to use the information resources. The visiting faculty members deliver special lectures to the students and therefore may sometimes need to make use of the information materials to ensure that they are providing the right information to the students. There are also visiting scholars who may make use of the academic library. Retired faculty members are also there who may visit the academic library to continue their research projects and even continue their studies sometimes. Faculty members may spend less or a lot of time in the academic library depending on the information required.

In addition to the students and faculty members of the college or university, the academic library may even cater to the information needs of students and faculty of other schools and colleges. These students and faculty members may need special permission to access and use the information materials of the academic library they are visiting.

An academic library may even meet the information needs of remote users and students who learn via the distance learning approach. In such a case, the

academic library needs to have a networking system so that these users can get access to the required information resources.

Check Your Progress

1. List some objectives of a school academic library.

2. Who are the self-sufficient users of a library?

7.3 INFORMATION NEEDS OF USERS

The various users of an academic library –student groups as well as the faculty members have various information needs for which they access the academic library. Academic libraries maintain various information materials and sources to ensure that they meet these information needs of all types of users. The information needs of the users also vary depending upon their level of study or research and the type of information they are looking for.

Information needs of student groups may relate to finding the right information related to a specific subject or a particular topic of a subject. The students may also need information related to research projects and may need to make use of reference materials to complete their project reports. Students may find the information required from a wide range of information resources like books, journals, encyclopaedias, newspapers, magazines, periodicals, and so on. The students may even access archival records maintained by university libraries to get the information required.

Students often need to write term papers that give an overview of the subject they are studying. This requires the students to access information materials like subject literature, textbooks, and also press items to complete this type of work. Graduate students may also need to access information resources in the academic libraries that cater to the subject collections. The students may need help in the subjects they study and may need extra information that can be obtained from the resources of the library.

Faculty members as users of academic libraries also make use of information resources to complete their research work and even continue with their studies if required. There are many faculty members who pursue higher studies and therefore need to access the different types of information sources like journals, periodicals and other reference materials.

Academic libraries maintain all types of information sources to meet the needs of the students and faculty members. These resources are maintained in a categorised manner to make sure that these can be accessed and used in an easy manner. Most academic libraries make sure that the information materials are classified on the basis of the subjects and also on the basis of the type of information they provide. These information resources are also indexed for easy access and

information retrieval. The academic libraries make sure that they make it convenient for the faculty and students to access the information. For this, the academic libraries make sure that they maintain the required tools, equipment and technological aids.

Most academic libraries have full-time and part-time library staff that assists the users of the library to find and use information. These personnel have the necessary knowledge to make sure that they help the users to find the required and relevant information. The personnel are qualified to understand the information needs of the users and are able to meet the information needs. The academic libraries are also equipped with library services to make sure that the information resources are made use of in an optimal manner. All academic libraries to meet the information needs of the users make sure that they have all essential and basic library services like information conservation, photocopying, bibliographic services as well as reference services. These services make it easy for the users to access the right information and use it in the best manner possible.

Academic libraries to meet the information needs of users also have computerised systems and databases to enable the users to find information easily and in less time. The computer systems allow the users to access all information records to get the required information. Information databases are also maintained on the basis of different subjects so that the users can easily access the information required. It is ensured that the users of an academic library are familiarised with how the computer systems can be used to access the required information.

In academic libraries, in addition to regular students and faculty members, there are students with special needs as well who need to access the information resources. In an academic library, there are physically challenged students who may sometimes need to access the information resources. These students need special assistance for accessing and using the library resources in an optimal manner. Students with disabilities can access library resources with the help of special equipment and special information materials that are specially maintained for such students.

Visually impaired students also need to access information resources and can do so with the help of technological aids. For visually impaired students, academic libraries maintain resources in the form of cassettes, tapes, talking books and voice-activated terminals. Sometimes, the libraries also provide volunteer reading support for visually impaired students. The academic libraries may also hire special personnel to assist the visually impaired students so that their information needs can be met.

For motor-impaired users of academic libraries, it is essential to make sure that the libraries are accommodating enough for such users. The libraries must be set up in a manner that is accommodating to wheelchair bound individuals. Libraries must also have ramps where the motor-impaired users can access the required information resources. An academic library to meet the information needs of motor-impaired users also needs to have self-servicing photocopying machines which

can be easily used by such students. It also becomes necessary for academic libraries to have personnel that can assist the motor-impaired students to access the required and relevant information in an easy manner.

Deaf users of academic libraries also have special information needs and these must be catered to in an academic library. It is important that an academic library employ special personnel who understand the information needs of deaf students. The library must also be equipped with voice amplification equipment so that the deaf users can make of audio-visual information materials as well.

In order to meet the information needs of users of an academic library, there are several services that a library offers. These include:

- **Circulation services:** These services include membership services, issue and return of books as well as book reservation services. These services are made use of all users of the library and it needs to be ensured that these services are provided in an effective manner to meet the information needs of the users.

- **Reprographic services:** With the increased number of publications, it is not possible for every academic library to maintain these publications and therefore reprographic services are provided in these libraries. These services ensure that users are able to access any publication from any academic library so that the information needs can be met.

- **Newspaper, magazine and journal services:** Newspapers, magazines and journals are information resources that help the users of information keep abreast with the latest and current news. Academic libraries offer this service to the information users so that they can access current information easily. The libraries display newspapers and magazines on a regular basis and journals are also arranged for retrospective use.

- **Reference services:** Reference services are made available by academic libraries to the library users who visit the library to seek information from a specific book or resource. The users are allowed to access the specific book or information resource and use the information for reference purposes.

- **Internet services:** Academic libraries of this day and age have computerised systems and networks that allow users to access information from several libraries. For this purpose, Internet services are provided by academic libraries so that the relevant information from the right information resource can be accessed and used by the users.

- **Information preservation services:** The information users of an academic library may also need to make use of very old information. This old information is maintained by academic libraries and preserved in such a manner that the information can be accessed and used as and when needed. For preserving old information, the academic libraries make sure that they reproduce the information in well-maintained documents so that they are easy to read and decipher.

- **Reading services:** Academic libraries also provide reading services wherein the information users are allowed to make use of the library space to sit and read books to find the information they are looking for.

In spite of the fact that academic libraries take every essential step to meet the information needs of users, there are several constraints that do not allow the users to access the right information. Some of these constraints include:

- The lack of library catalogues does not allow the users to access the library resources in the right manner. A library catalogue is an alphabetical list of holdings of the library. When a library catalogue is not present, the users spend a lot of time looking for the right information resource and may sometimes not locate the information.

- Lack of proper arrangement of the books and information materials in academic libraries does not allow the users to access the information in a timely fashion and results in wastage of time. In an academic library, it is important that all information resources be maintained and arranged in a proper order for easy access and retrieval. When the information resources are not maintained in a proper manner, the information users are unable to locate the required and necessary information.

- In academic libraries, there may be a problem of misplaced and lost documents that does not allow the information users to get the right and relevant information.

- Lack of automation in academic libraries does not enable the users to access the right information. When the library system is not automated, it does not function in a smooth manner because a large number of users wander here and there in the library to find the information needed. With an automated system, the process of locating and retrieving information becomes very easy.

Check Your Progress

3. What are information needs of student groups?
4. What are reading services in an academic library?

7.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The objectives of a school academic library include:
   - Foster reading interest among students.
   - Promote reading habits among students.
   - Inculcate communication skills and develop these in students.

NOTES

2. Self-sufficient users of a library are the users who are well-versed with how the library functions and where to locate the required information. These students do not need the help of the library staff and spend a lot of their time in the academic library.

3. Information needs of student groups may relate to finding the right information related to a specific subject or a particular topic of a subject.

4. Academic libraries also provide reading services wherein the information users are allowed to make use of the library space to sit and read books to find the information they are looking for.

7.5 SUMMARY

- Academic libraries build and maintain a collection of books, periodicals, reference materials, and several information resources.

- Academic libraries also offer several library services like documentation services, reading facilities as well as lending and reference services.

- The idea behind having school libraries in primary, middle and secondary school levels is to aid the teaching and learning process with information that is not available in text books.

- Schools library services include reading, lending, reference and guiding and advisory services.

- College libraries are the libraries that are established in college campuses to meet the information needs of students of the college as well as the faculty members.

- A college library must provide the latest editions of all information and reference sources so that the students get the latest and updated information related to a specific subject or research project.

- A university library must store, preserve and maintain all information resources in a categorical manner so that it can be found and used easily by the information seekers.

- The users of an academic library in school libraries are mainly the students and teachers who use the information materials to aid the learning and teaching process.

- In college libraries, the users of an academic library are the students of various courses and the faculty members who use the library materials for teaching, learning and research.

- In a university library, in addition to students and faculty members, there are many other users of the library.

- Undergraduates and post-graduate students in colleges and universities visit the academic libraries to collect information to aid their learning process.

- An academic library may even meet the information needs of remote users and students who learn via the distance learning approach.

- The various users of an academic library –student groups as well as the faculty members have various information needs for which they access the academic library.

- Academic libraries maintain various information materials and sources to ensure that they meet these information needs of all types of users.

- Academic libraries maintain all types of information sources to meet the needs of the students and faculty members. These resources are maintained in a categorised manner to make sure that these can be accessed and used in an easy manner.

- In spite of the fact that academic libraries take every essential step to meet the information needs of users, there are several constraints that do not allow the users to access the right information.

7.6 KEY WORDS

- **Periodicals:** It refers to a magazine or newspaper published at regular intervals.

- **Journals:** It refers to a newspaper or magazine that deals with a particular subject or professional activity.

- **Travelogues:** It is a film, book, or illustrated lecture about the places visited by or experiences of a traveller.

- **Reprographic Services:** It refers to the reproduction of graphics through mechanical or electrical means, such as photography or xerography.

7.7 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Who are users of an academic library?
2. What information needs do different users of an academic library have?
3. How are students users of an academic library?

Long Answer Questions

1. How does an academic library meet the different information needs of users?
2. Why do faculty members of colleges and universities visit academic libraries?
3. What problems are faced by academic libraries in meeting the information needs of users?

7.8 FURTHER READINGS

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UNIT 8   OVERVIEW OF USER EDUCATION AND SERVICES

Structure

8.0   INTRODUCTION

All through their life, human beings keep learning new things and in the process, they continue to educate themselves. So, it is possible to say that education and learning happen all through a person's life. Nevertheless, generally a human being enters the sphere of formal education on joining an elementary school, and this education is supposed to be complete when one clears the university exams post attaining the highest available degree in the chosen discipline. Previously, it was considered that education for life would not be complete if the person did not have an understanding of how the resources of a library can be utilized to attain knowledge and, thereby, be able to self-educate all through his life.

In the current times, the concept of education-for-life holds greater importance as now, it is important for a person to keep learning and for that purpose possess the ability to do so all through life. Encouragement is provided to students for looking at their subjects and other aspects of study with a critical, creative and logical mind. To attain this, there is a need to teach the students to be independent. Then again, for the students to become independent, they must have the skills and knowledge needed to find their way around. Therefore, with so much stress being laid on self-education, there is now a visible rise in such teaching methods, as project work, tutorials and seminars, while the traditional methods, such as classroom instruction and formal lessons are diminishing. The concept of self-education implicitly assumes that each learner has the ability to glean out such materials that will suit his requirement. Nevertheless, in reality, making such an assumption is not practical as it is important to teach the learner how to search for

relevant materials. This will enable the learner to take advantage of the novel learning methods. With the rise in interdisciplinary courses, specifically in higher education institutions, it becomes essential that instruction is provided to students by libraries for courses that do not have subject boundaries as these subjects are not easy for students to locate, select and organize study material for. In such cases, the amount as well as the variety of formats and sources of information are reasons why the students need guidance for sifting out information.

At the beginning of the 20th century, people looked upon a service library as a reactive library that made available superlative service to a comparatively small user group. Setting up and running a library is an expensive project; however, the sad part is that there is a very small user group out of the vast potential users which is actually interested in utilizing these expensive facilities. Several committees including Parry Committee have mentioned this fact. According to the Parry Committee report, in the United Kingdom, only a few students made active use of their academic libraries. The proactive library concept requires that a serious attempt should be made to bring each and every potential user into the library. Whatever be the type of library, it is essential for it to attract the maximum possible users. There is no point of having a well-equipped library if it has no or few users. Any finances put into the training and education of users will be considered to be fruitfully invested if it furthers the appreciation and use of the library. User education does not have the sole purpose of stimulating the use of a library since this is just one information source. In fact, user education is connected with the entire process of information and communication, and a part of this process is the interaction that the user has with a library. It is essential to understand that user education is essential for the purpose of a library and to effectively use the sources of information.

8.1 OBJECTIVES

After going through this unit, you will be able to:

- Explain the purpose of user education
- Describe the concept of user studies
- Discuss the methods in user education

8.2 USER EDUCATION AND SERVICES

Several user studies performed in various countries prove that there are but a handful of scientists who actually utilize libraries optimally and have knowledge of different bibliographical tools. It has also been proven that any knowledge or understanding of the use and structure of scientific literature must be taught since it is not possible to gain it intuitively. The Royal Society Scientific Conference has officially recommended that there must be a training on how to make use of scientific

information. A survey was included in the Perry Committee report pertaining to the use by the undergraduates of the university libraries across the UK. The report said that only a few students were active library users. Across the word, training programmes have been created and implemented to train and educate library users on effective and optimal use of libraries. Such education is generally known as user education.

More broadly, it is possible to look upon user education to be a programme or process that enables potential users of information to gain awareness on how valuable information is, and motivates them to make use of the various resources of information. It is also advisable that proper instructions should be provided to readers to enable them to use libraries to their best. According to well-known subject expert Gordon Wright, one must not teach students to make use of libraries in isolation, but instead teach them to look upon it as being an unending process of education in which facets of communication are mixed together inseparably.

The term 'user education' includes all such efforts and programmes that will, whether collectively or individually, instruct and guide the current and future, and even potential users, keeping the following goals in mind:

- Recognizing own information needs
- Formulating the recognized needs
- Using the information services both efficiently and effectively
- Making an assessment of these services

The entire process of communication and information is associated with user education and the complete interaction of a user with a library is one of its parts. It is essential that user education should become a never ending process, which should begin with school and public libraries. This must also encompass the use of specialized and academic libraries. User education forms a focal point of the very purpose of the existence of a library and of information resources' effective use. In 1948, the Royal Society Scientific Information Conference proposed a pattern for user education programmes and most of the academic user education programmes have adopted that pattern. According to this pattern, there should be one of the courses given to new students for making them familiar with the use of the library, and this should be furthered by advanced user courses which are based on the structure of the literature of their subject field.

Components of User Education

In an ideal situation, user education would be an ongoing process comprising two components—orientation and instruction—which are brought together as per the needs and demands of the users. The concern of orientation is with how a user should be familiarized with the general methods of usage of a library, available services, facilities, layout and organization of the library. Orientation pertains to affective objectives, such as attitudes and feelings, and also to cognitive objectives

such as understanding. During such orientation programmes, it is essential to set up the correct environment which will ensure that effective communication is formed between the library staff and the user. At the same time, it is also essential that the library appears to be a friendly and pleasant institution where the user can be comfortable in seeking help. The end result of the orientation should be to make the user have confidence in the competence of the library staff and their willingness to provide help in all situations. The other user education component is instruction (also called bibliographic instruction), which is associated with understanding how to utilize the information resources that a specific library has to offer. It is associated with retrieval of information and the various techniques available for exploiting the different sources of information to their fullest. There are two levels or courses at which bibliographic instruction should be provided. These are introductory and advanced course, which is provided as per the level of the user.

User education, on the practical level, comprises the organizing of the various aspects of the courses, such as content of the course, timing of the course, timetabling, optimum group size and optimum duration for the course. Furthermore, though it is essential for the librarians to attract the students to use the library, it is equally essential for teachers to provide students with such experiences which will convince them that it is essential to make use of the library since it will prove to be rewarding for the path of education undertaken by them. The students must be convinced that making effective use of the library will enable them to solve their information related problems effectively. For this to happen, it is essential that the user education programme is combined with some academic teaching programme ensuring that the teaching faculty and the librarian can have better cooperation. This kind of cooperation is capable of leading to the addition of relevant practical work to the programmes being implemented for user education.

There is a very close association that exists between academic programmes and the library in the case of 'course-integrated' user education. There have been different types of proposals for user education programmes that focus on ideal cooperation between the faculty and the librarian. In line with the same, there is the 'library college' concept which propagates that the dominant learning mode of students should be 'independent study in the library, bibliographically guided, intellectually aroused and spiritually stirred by the faculty'.

8.2.1 User Education Development

The progression in the area of user education is documented well. To take an example, Professor of Library Science George Schlegel Bonn's work 'Training laymen in use of the library' carries a survey of the user education field and has information till the year 1958. There is an update on it by Library Science expert Allan Mirwis who covered academic instruction, as it is conducted in America, in the form of a bibliography from 1960 to 1970.

Well-known library science author Deborah L Lockwood's *Library Instruction: A Bibliography* comprises 934 items that are categorized in the following three sections:

(i) General

(ii) Types of libraries

(iii) Methods and formats of teaching

Furthermore, developments have been described by famous author M. N. Tidmarsh in both theory and practice of user education amongst academic libraries across the UK.

Besides all such records that have been documented, there has been a steady evolution of the concept of user education and it has come to be accepted widely because of the systematic and initiative work done by various prominent people. Let us look briefly at this development pattern of user education.

It is Patricia B. Knapp to whom one can ascribe the origin of the systematic implementation of the user education concept. Knapp has played a major role in the development of library science, especially with her report in 1964, whose main thrust was the 'exploring methods of developing a more vital relationship between the library and college teaching'. Monteith College of Wayne State University sponsored this project. An attempt was also made by Earlham College to make user education programmes in a similar manner. During this time, user education began to be identified with bibliographic instruction and/or course-related library instruction with its own strategy. Here, there were two components of bibliographic instruction—one is associated with the sources for conveying knowledge and the other is associated with developing those skills that are vital for absorbing bibliographic instruction. The various aspects of this kind of bibliographic instruction are as follows:

- Subject analysis
- Indexing and abstracting periodicals
- Library catalogues
- Principles of knowledge organization
- Search strategy
- General types of reference works

The subject of what role a library plays in the area of higher education has been long debated. The 'Library Arts College' concept was introduced by noted US librarian Louis Shores in 1934 and over the years, it began to be known as 'Library College'. The main aim of a 'Library College' is to enhance the effectiveness of student learning, specifically with employing the facilities of a library and its bibliographically expert faculty for library centred independent learning. The purpose of a Library College is to get rid of the instructions imparted in the

class room lecture arrangement where a library is a supporting agency, and replace it with a room within the library itself with the process of learning/teaching that depends on the independent individual efforts of each student. Thomas G. Kirk, Patricia B. Knapp and Louis Shores, the pioneers in this field, worked as loners even though they did receive some amount of institutional support in this direction for their experimentation.

The Council of Library Resources and Association of College and Research Libraries in the USA was the one to start the institutionalization of user education. Further promotion and a push forward was given to the implementation of user education in the United Kingdom by the British Library Research and Development Department and the Centre for Research in user studies. It was this institutional patronage that led to several significant projects for user education, such as the UNISIST (United Nations International Scientific Information System) Programme for user education.

The main thrust of all programmes pertaining to user education is towards academic institutions. The activities in America in this field focus on under-graduates, while in the UK, it focuses on students pursuing post-graduation or research. The programmes for user education need to be steered in the direction of developmental processes in nations that are less developed. Through the UNISIST programmes, UNESCO (United Nations Educational, Scientific and Cultural Organization) made an attempt to initiate user education programmes in countries that were less developed. The UNESCO General Information Programme (PGI) was promulgated by UNISIST in 1975. Under the objectives of the UNISIST Information Policy, great importance is given to user education. According to the UNISIST document: '…basic training in the use of existing information sources, obtaining feedback from users on the results of information needs, studies, and involving, as wide range of users as possible in any new experimental services.'

The UNISIST Bangkok and Rome Seminars of 1976 concluded that for every nation, user education is a major factor in the country's National Information Policy. It was recommended by the seminar in Rome that National Policy on User Education should be created in correlation with the national education policy and as an integral part of the national policy. Both at national and international levels, several seminars and conferences have been conducted to discuss user education. In 1970, at Loughborough, UK, the Fourth Triennial Meeting of IATUL (International Association of Technological University Libraries) was held. It was one of the earliest conferences on user education and had the theme 'Educating the library user'. The 1stt international conference on Library User Education was conducted in Cambridge in 1979 with the theme 'Library User Education: Are New Approaches Needed?'; the second international conference was held in 1981 in Oxford and it pertained to user education across various types of libraries. Some more user education related international seminars were the 1976 Anglo-Scandinavian seminar in Gothenburg, Sweden; workshops held in 1981 at Essen,

Federal Republic of Germany; in the same year, another workshop was held at Cranfield Institute of Technology, Melbourne, Australia; and in 1982, a seminar on 'User Education in the Online Age' was held in Gothenburg. Of note is the fact that user education's early development happened mostly in nations that were English speaking countries, mostly Canada, Australia, the USA and Britain. Nevertheless, over the past twenty years, Scandinavia has seen a tremendous spurt in user education programmes. Over the past approximately ten years, there is an involvement amongst nations on Europe with user education's development, and they have put greater effort and attention in this area. Japan is actively associated with the movement for user education. China has also witnessed its end-user training turn into a successful activity.

In India, too, activities have been taking place in this direction. Workshops and seminars have been organized by both INSDOC (Indian National Scientific Documentation Centre), New Delhi, and DRTC (Documentation Research and Training Centre), Bangalore, to promote user education. In 1981, a national conference on user education was organized at Waltair (Andhra Pradesh) by IASLIC (Indian Association of Special Libraries and Information Centres), Calcutta, which led to the creation of a volume of papers on the subject. Efforts have been made by ARI (New Delhi) towards creating a specific course for 'Library Use, Reference Compilation, Scientific Paper Writing and Proof Correction'. The course from ARI does not follow any of the predefined guidelines like the one put forth by UNTSIST. In India, there has been no systematic effort made to institutionalize user education. All efforts that have been there have been sporadic and voluntary. The user education concept was much liked by information professionals and librarians all across the world. With reference to user education, three types of experiences have been found. In the historical perspective, it is considered that the American experience is innovative, since it has created the path that others are now taking. Some people who are considered the pioneers in this field are: Thomas Kirk, Patricia B. Knapp and Louis Shores. The leadership and initiative of persons like them was responsible for America to widely accept user education. Then came the institutional framework which was started by Eastern Michigan University via the many activities that they conducted. A major success in this came as the statement of objectives of the Association of College and Research Libraries where attention was given to user education as well. The user education's institutionalization process got its impetus from funds provided by private foundations.

In the field of user education, the UK has a different story compared with the USA. In the UK, user education programmes are mostly pushed forward by the central body such as the Library Research and Development Department. From institution-making which was largely decentralized in the United States, in the UK, user education has taken on the character of centralization. There is the advantage in centralization of coordination and this has a major hand in planned

development. Even though at the level of concept, there is the community across the world to stand behind user education, persons in different nations might provide it a different form and shape based on their specific experiences and requirements.

Purpose of User Education

When one plans programmes for the education of users of a library, it is essential that the goals and objectives that need to be achieved through the programme are clearly defined. It will be required, for example, to define the timing for every stage of the programme as well as the content to be covered at every stage, the media that will be employed for teaching, and the methodology and methods that will be used for the programme. How successful is the plan that has been laid out is tested, prior to actual full-fledged implementation in a specific situation.

The objectives and goals for the creation of a course can be segregated into three major categories: psychomotor, affective and cognitive. It is mostly in the affective and cognitive category that the objectives of a course for library user education are located. The goals that fall in the cognitive category are mainly associated with the understanding of the concepts. It is possible to arrange the objectives and goals in the cognitive category based on the amount of associated complexity moving from the complex to the simple and from the abstract to that concrete. In the case of the affective category, the objectives and goals are associated with feelings, like whether or not a student wishes to and whether or not he finally does behave in various educationally desirable ways. To take an example, is the student finding pleasure in being involved in making use of library resources for the purpose of locating information?

Objectives and goals that fall in the psychomotor category are associated with such activities that require physical coordination like riding a bicycle or using a laptop computer. Generally, it is found that affective objectives and cognitive objectives share a close relationship. So, in the cognitive category, instructions created for library users should contain the manner in which specific library tools, such as abstracts and catalogues, are to be used when the need arises. In the affective category, the student has to be equipped to be confidant of making use of the correct resources in a library for obtaining the required information. The idea of involving the students while making decisions regarding the objectives and goals of the course is very effective.

In the field of user education, one major development is the increasing realization of the importance of setting objectives and goals when library user education is being planned. Sally Stevenson, John Lubans and several other authors have expressed their concern regarding the missing guidelines as far as instructions in library skills are concerned. In the USA, the ACRL Task Force on Bibliographic Instruction has a major part to play in spreading awareness on the importance of instructional objectives and goals. Also, the ACRL Bibliographic Instruction Handbook of 1979 carries a set of model objectives. All objectives and goals that

are created for a library user education programme must be prepared, keeping in mind the objectives and aims of the library for which the programme will be implemented. Moreover, the programme needs should be closely related to the objectives and aims of higher education. Following is how one can express the objectives and goals of a library in a university:

- To contribute for achieving the institutes' aims in the context of teaching of research and learning by acquiring non-printed and print material required for taking care of the current and future needs of information

- To store and register the acquired material in a manner which will enable as well as actively stimulate its use

- To make requisite changes to all sources of information so that they will always fit in with the current needs of the university and the society at large

- To help in the integration of the international as well as the national resources for information within the university

As has been mentioned before, one way to stimulate the library users to actively use the information present within the library is to teach these users how the available materials can be used to gather information. Therefore, a user education programme's general goal should be to make the users generally aware of the available resources within the library. Particularly, in the case of such libraries that are special libraries and deal in subjects, such as technology, medicine and the sciences, in which the rate with which the literature increases is very fast, it is critical to ensure that there is user instruction.

Library user education is not part of a separate academic discipline. It comprises a set of skills that can be utilized similarly irrespective of what the subject of academic study might be. Therefore, instruction in use of a library is best imparted when it is made part of the teaching programmes that are there in the academic disciplines. In this light, it is seen that a fair amount of cooperation is needed between the academic and the library staff, and the students as a community for the successful implementation of library user education. Earlier times saw a substantial amount of continuous debate happening on what the objectives and goals of user education should be. Such organizations like the UK based ASLIN and the USA based ACRL tried to come up with their own guidelines and proposals for the same.

Information professionals, such as Hartz Scrivener and Hutton, also put forth their views. Following are the words of Scrivener, summarizing the aims of a library user education programmes at a university: 'The details will necessarily vary in different situations but teaching should establish and promote those traditional skills without which no student can make adequate use of this library: (i) an understanding of library arrangements; physical, bibliographical and conceptual; (ii) a knowledge of sources which will be appropriate in any given situation; and (iii) the ability to interpret his own peed so as to frame relevant question; (iv) an

awareness of search techniques including the ability to devise serviceable routines and finally the student needs skill in the art of evaluating his sources and presenting his materials.'

Chalmers University of Technology Library, Sweden, looks at the following as being the key goals of a library user education programme:

- Being able to apply the principles of scientific communication to information retrieval problems

- Being able to employ the various available tools in the library to search out information that will be appropriate for the studies and later work as and when required

After devising the programme's broad goals, it becomes possible to formulate several specific objectives to fit into the broad framework of the goals. It always comes in good stead if a clear differentiation is maintained between library instruction and library orientation. While the purpose of library orientation is to make the students aware that a library exists and that it offers the various services for the benefit of the students and how to make use of the library, the purpose of library instruction is to help students gain the required information for their specific requirements for fully utilizing the available materials and resources in the library, and it also deals with information retrieval problems.

Media and Methodology in User Education

Many have said that education is the process that goes to change learners. There are several factors that affect this process of education. Of all the various factors in this category, there are four basic ones which affect learning: feedback, understanding, activity and motivation. These four factors are also applicable in the case of library user education programmes. What media and teaching methods will be most appropriate is dependent on the teaching/learning situation that exists at that point of time, the subject matter that is under consideration, who the students are and also on who the teacher is. It is not possible that the same method will fit well into each situation. Nevertheless, teaching methods can be broadly categorized as those that are appropriate for group instruction, those that are appropriate for individual instruction, and those that will hold good for both group and individual instruction. For the purpose of group teaching, some of the methods that will be appropriate are: guided tour, lecture, seminar, tutorial and demonstration. Methods that prove to be suitable for the purpose of group and individual instruction are: audio tapes, video tapes, tapes of other kind, illustrations and slides. For purely individual instruction, the appropriate method would be providing individual help; use of self-instructional material, such as tours, signs, and so on; programmed instructions; practical exercises; printed guides; books and other micro media.

Methods that employ auditory simulation, visual simulation or the two of them combined can be used for the purpose of teaching. Methods that make use

of just one channel of communication are considered to be less effective than those that employ the use of a combination of sensory inputs. It is a fact that the interaction which takes place amongst the individuals who are connected together due to the learning/teaching situation is also responsible for how the learning process will be affected. The interaction during the learning/teaching process can either be a student-teacher or teacher-student interaction. It is opined by experts that in a situation where there is a programmed instruction, students are seen to be working like they are isolated individuals. In such a case, these students will have no interaction or may have minimal interaction with the teachers or even other students. While that can prove to be of advantage to such students who are introverts, it is not one what will be favourable for those students who are extroverts, and prefer the companionship and the competition of the classroom. There are several different methods of providing library user education. Let us look at them, and also the factors that affect the learning process and the various sensory inputs that are used, and the students-teacher, and student-student interaction. It is important to note that there is no single method that proves to be appropriate in every situation and for every teaching/learning scenario or even for all individuals. The fact is that for an education programme to be successful, there is a need to use several and different media and methods which will supplement each other. Nevertheless, in traditional library instruction for large groups, the method of lecture for individuals and smaller groups and the method of providing individual help in case of such individuals who actually reach out for help is employed.

Methods of Imparting Instructions

The various methods of imparting instructions are discussed as follows:

1. Lecture

One of the most used and common instruction imparting methods is a lecture. Lectures are considered to be a good way of teaching or imparting instruction to large groups of students. Lecture is one method in which two types of inputs are used: sensory as well as auditory. There has been a very strong criticism of lecture as a form of communication in education. The greatest disadvantage that the lecture method of imparting instruction has is that the speed of imparting instruction is not in the control of the receiver and there cannot even be any repetition. Handouts will be required for reiteration. Yet, the advantage of the lecture for imparting instructions is that it makes available to the students the opportunity to have personal interaction and even have an opportunity to give and take feedback. When it comes to imparting information regarding bibliographic data, lectures prove to be an ineffectual method. Lectures are just appropriate for providing only a general introduction to a course on information retrieval. Also, if the students' group is mature, it will gain from the use of the lecture method, while beginners might be hindered by it.

2. Demonstrations, Tutorials and Seminars

It is generally for small groups of users/students that demonstrations, tutorials and seminars are organized. When compared with the lecture method, seminars, tutorials and demonstrations provide an opportunity to the users/students to be actively involved in the process of learning via more interaction between the students and the teaching staff. In the case of seminars, there is a less formal atmosphere and there is more room for integration between the one teaching and those who are there to learn. One can make use of practical exercises to motivate the students and have them involved actively. Progress related feedback is given to the students during the practical sessions. Since it is not easy to explain the use of various specific tools for information retrieval in the absence of source materials, it becomes prudent to have seminars on library user education. The seminars will be a good means of demonstrating the use of specific tools for the retrieval of information. Demonstrations can be used effectively with small user/student groups for the purpose of teaching the use of the many available information retrieval tools. When employing the demonstration method, the users/students can be given opportunity to actively search the information on their topic of interest.

3. Guided Tour

Generally, this is the approach taken with freshers when orienting them with how to make use of the library. Such an orientation comes in handy with those users/ students who have very little or no interest and motivation to be users of the library. It has also been suggested: 'A better programme for short library orientation is the self-paced printed or audio tour followed by appropriate exercises. This method brings library users into the actual building where they carry out a series of practical tasks concerned with the location materials, photocopying, use of catalogues and other routines. Self-guided tours have been used successfully in many libraries.'

4. Audio-Visual

Nowadays, use of audio-visual (AV) media has been gaining tremendous ground in the learning-teaching process, and more specifically, in the education of library users. As early as 1982, catalogues were published which pertained to AV media and Computer Aided Instruction (CAI) software for user education and librarianship, and the information contained in them proved to be useful to the field. In the field of library education, there not many places where the use of moving images is imperative to impart appropriate instructions. Therefore, it becomes possible to pass on the information via a series of units, such as printed illustrations, overhead transparencies or slides. In this light, it would appear that in library user education, the user of printed materials in conjunction with audiotape or the use of slide/tape medium would be appropriate. There are several advantages to be gained from slide/tape productions, such as controlled over presentation

speed, availability at all times, flexibility, easy updation and the clarity associated with the exposition.

5. Video-tapes

Just like films, even videotapes are a media that contain both motion and audio. Such tapes are reusable, and this makes the creation and further updation of the content a less expensive task. Nevertheless, it is extremely time consuming to update video tapes. It is possible to make use of video recording for such an atmosphere that is real, but these requirements are not usually met with in library instructions. The actual materials of the video recording can be stored on such media as discs, film and tape, to name a few. Nevertheless, libraries face the problem of the video materials being standardization so far as the output for the different systems are concerned. In the library education situation, the most appropriate media seems to be the cassette system. In the present time, two forms of TV cassette systems are in use: systems that have only playback, and systems that come with playback and recording facilities. Moreover, it cannot be stressed enough that that key problems that arise even here are due to the problem of compatibility between the various systems. These methods also have advantages like they enable the careful preparation of material and its reusability several times over. Internal TV systems can use displays suitable for audiences of different sizes; whereas the personal contact of teacher or seminar is the last in this method. In this method, generally it is not possible for students to interrupt and get into discussions or ask questions. So, in reality, this form of instruction makes the student a passive learner.

6. Programmed Instruction

The implementation of programmed instruction can be done via several different media with the use of computers (CIA for automatic display of slides) and printed books. In the case of library instruction, programmed instruction can provide several advantages. To take an example, it becomes possible for user/student to learn and work at the pace that they are comfortable with. It becomes possible for them to take part actively in the process of learning process and they can even obtain feedback directly for the progress that they are making. It even makes it possible for the teaching staff to get the students' records pertaining to their progress. Yet, it has disadvantages, one being the factor of isolation so far as a student is concerned. Students who are extrovert and who prefer an atmosphere in the classroom of competition and companionship could be averse to such a learning method. It is mainly in the United States that instruction for computer aided learning is created.

7. Signs and Informational Graphics

Both informational graphics and sign systems are extremely basic means available to instructors for providing orientation to users/students regarding library use. The

Graphic Information Research unit at the Royal College of Art conducted a study on British libraries which showed that generally there was a very poor standard as far as graphics were concerned, and also the construction and design of the signs also varied from one to the other. Nevertheless, in America, in recent times, a decided increase had been seen so far as this key facet of user education is concerned, as well as several guides and handbooks have been created to cater to it. To quote: 'Librarians started to apply systems approach in which different types of signs are used to illustrate different functions such as orientation, direction, identification, instruction, prohibition or regulation or current awareness. These functions fall into two main types: signs related to direction finding and signs related to the use of library resources. If signs are to be effective for user orientation, they must be carefully planned with regard to position, content and presentation.' Even though it is expensive to produce well designed signs, the expense is worth undertaking since it is a worthwhile investment as the signs will be long lasting along with their aiding to ease the physical barriers in the library.

8. Individual Instruction at the Reference Desk

The belief is that the type of library instruction that is unsurpassed by any other is personalized service at the reference desk. The reason for this being considered the best form of instruction is that when a user poses a question at the help desk regarding how to use a specific facility in the library, it shows that the user is motivated to know about it. The user/student will then be involved actively in the process of learning and will get his help straight from the expert. There is a drawback to such imparting of instruction. To quote, '…it may provide immediate relief to the students/users, but not necessarily the understanding and background knowledge to cope up with similar situations that the student/user might face in future.' So, which media or method of teaching to employ is dependent on the learning-teaching situation, the training's subject material and the audience who are to receive the training as well as the staff which will be part of the process of training. It is preferred if the media and methods for education of library users work with the active participation of users/students at a point when they feel motivated. In actual instruction imparting, when media and a preferred teaching method are combined, they could form the optimum basis for library user education programmes.

User Education and Information Technology (IT)

Over the past two decades, the use of computers for the purpose of activities related to information has been on the rise. Such use of computers has led to the fast development of online information retrieval systems that are computer based. Computer based information files and database files are being created by several organizations, such as the US National Library of Medicine (Index Medicus) and American Chemical Society (Chemical Abstracts). Databases such as these can be accessed widely and even used for the purpose of searching information.

Searches in such databases can be made via local terminals that are connected or linked with the central computer with the help of a telecommunication network.

Efforts in this direction have given rise to several online information retrieval systems, whether or not these systems will get used or how well and to what extent they will be used is dependent on user education in this direction, and on the functioning and availability of this method of information retrieval. In this light, it becomes essential to understand the objectives and goals of online user education and how best to achieve them.

Online Education Groups

There are several groups that are involved with the online education, training and orientation of library users. Some categories of such groups are listed below:

- Producers of databases
- End users
- Institutions involved with terminal operation like information centres and libraries
- Intermediaries
- Library schools
- System operators

There is a lot of difference in what motivates these different groups to be involved in this activity. Mostly it is seen that the motivation needed for being involved in these kind of training programmes is in part financial and closely associated with the sale of a specific product like information system or database. In the case of online user education, the objectives and goals can be put into two primary categories: intermediaries and end users. It is possible to categorize online education programme as being composed of either instruction or orientation components. In the case of orientation, the programme will have the objective of enabling users to become aware of the available services and the computer-based information retrieval services. In the case of instruction based programmes, the objective is to enable users to have a detailed understanding of the way to retrieve information with the help of computerized information retrieval systems.

Key Goals of IT in Library User Education Programmes

(a) To enable an end user to carry out online information searches either himself or with the help of an intermediary, within his own subject field, as and when required, in connection with information needs

(b) To enable an intermediary to carry out online information searches for end users within many different subject fields, from the available databases, on the various information retrieval systems

Methods Used in Online Retrieval Education

The process of online information retrieval is one that is interactive and it requires that specific attention should be given to such methods that will allow the display and experience of this interaction. To provide an effective demonstration of online information retrieval, it becomes essential that moving images are displayed just as they would be generated while actual search is on so that those watching the demonstration see what they will actually meet with while performing their searches. The end goal of online instruction, for the users as well a as the intermediaries, is acquiring the ability to perform effective online information searches. To attain this, it becomes essential that practice is done on an actual system. This is where the concept of 'learning by doing' comes into play and this concept plays just as much an important role in the other methods of library user education. Systems operators have understood the importance of live online instruction and they have themselves been responsible for coming up with several teaching aids. To take an example, in the MEDLINE system, it is possible for a user to ask for instructions interactively when he begins his search and also ask for help when the search process is already underway by providing some of the instructions in the form of a request.

Possibly the most common means and an essential element of intermediaries' training is allowing the intermediaries to work with and observe a searcher who is well versed in performing searches. The actual 'hands-on' training for online searching forms an important part of end user education for performing computerized information retrieval. This helps the users/students to have involvement with the process of learning and to even remain motivated. Oftentimes, the method that will be used for teaching is influenced by the learning effects as well as on equipment availability and cost of use.

User Education Programme Evaluation

Evaluation is looked upon as having different meanings for different educational research workers. It is concerned with information gathering regarding an educational programme or course's effects. It looks at making a comparison between the effects that have been observed against intentions and expectations. To quote: 'Evaluation is concerned with the collection and analysis of information about the input, in terms of educational potential, the variables affecting the educational process, and the end product or output. Evaluation can be directed towards the various aspects of the educational course or programme.' The very fundamental reason for performing evaluation is gathering and analysing of information whose outcome can then be utilized for the purpose of rational decision-making. In the arena of library user education, evaluation also takes into consideration economic use of specific libraries and information systems in general. For a library user education programme to be successful, its objectives and goals need to be based on an amalgamation of the specific needs of the library staff, the academic staff and the students. Therefore, the evaluation of such a programme will have to

measure the realization of the pre-specified objectives and goals, and will need to be multifaceted. It will need to look at attitudes to libraries, information skills, library use, effects of various instructional programmes, and even the specified information or library resources.

Evaluation: Scope

Evaluation might range from the study of details, such as the use of given teaching methods or media, through the effects of specific courses, whole library instructional programmes to the extreme of general educational systems.

Evaluation: Methods

For evaluation, generally one of the following three methods are employed:

    (a) Illuminative or responsive

    (b) Psychometric

    (c) Sociological or management

In the case of psychometric evaluation, it is assumed that it is possible to provide different treatment exposure to the control groups and to the experimental while controlling the other variables, and the changes are then observed with the help of attitude scales, achievement tests or psychometric tests. In psychometric evaluation, it is possible that the experimental group is exposed to some curse which is of a new kind while the traditional course is provided to the control group, and in all other respects, the two groups are treated comparably. Both the groups are made to take pre- and post-tests, and the analysis post the course completion is used to find how the performance of the two groups differs. This procedure for evaluation does not look at unexpected results but just concentrates on measuring output against goals that are pre-specified goals.

Use of sociological evaluation method is made while studying the changes in an organization's structure. Such form of evaluation rests on the use of questionnaires and interviews. The focus of all the attention is the organization which is experiencing the change, and no comparison is made with a control group.

The term 'illuminative evaluation' was coined by library science theorists Malcolm Parlett and David Hamilton. Illuminative evaluation has not been restricted to the initial formulation or aims; it even has a scope for taking into account unexpected results. The study's most important part is considered to be the actual implementation of an innovation and the focus of the research is on what is actually occurring as a reaction to that innovation. Illuminative evaluation does focus on the testing of an educational programme, but rather the understanding and describing of the conditions under which the programme works, and what effects are there on those participating in the programme. In this form of evaluation, information is gathered with the help of explorative interviews and observational studies.

Library User Education Programme: Need for Evaluation

It was observed by eminent theorists Brewer and Hills in 1976, that '… librarians should take evaluation more seriously and to think more professionally about their teaching commitment'. In this light, it has been observed in the recent times that librarians have seriously taken on the task of evaluating their library instruction programmes even though they are not yet done systematically. When bibliographies and handbooks on user education were examined critically, it was found that evaluation has not been well documented in comparison with the other aspects of the programmes. Of note is the fact that where there is systematic and documented evaluation and feedback for programmes, when actually implemented, it will lead to much improved future programmes.

Like all other libraries, the university library should also have, on offer, library, documentation and information services. Few of the key services take the following into account:

(i) Library Services

    (a) Lending

    (b) Information and reference

    (c) Reading rooms

    (d) Assistance in the use of the library

    (e) Display of current additions or preparation of lists of current accessions

(ii) Current Awareness Services

    (a) Current contents of journals

    (b) Alerting services to important literature in selected fields

    (c) Selective dissemination of information

    (d) Newspaper clipping service

(iii) Literature search

    (a) Compilation of bibliographies on specific topics

    (b) Index to current literature

(iv) Condensation Services

    (a) Preparation of abstracts on specific topics

    (b) Digest services

    (c) Preparation of reviews/progress/advances on specific subjects

    (d) State-of-art reports

(v) Other Services

    (a) Document supply services

    (b) Reprographic services

    (c) Translation services

    (d) Computer-based information retrieval

(vi) Specialized Services

    (a) User education

    (b) Exhibition and special displays

    (c) Special lectures and demonstrations

    (d) User-oriented seminars, workshops, and so on

Planning of these services should be done, keeping in view the general demand for such services and the competence of the library in offering these services. User needs and interests are of primary concern in offering all such services in the university libraries.

Check Your Progress

1. List the goals of user education.

2. What pattern of user educaton was proposed by the Royal Society Scientific Information Conference for user Education programme?

3. State the components of user education in an ideal situation.

4. List the various aspects of bibliographic instruction.

5. How can the objectives and goals for the creation of a course be segregated?

8.3 USER BEHAVIOUR AND USER STUDIES

At each level, the key focus point of every activity related to information is the user. Being a broad concept, the tern 'user' could comprise the producers and also the clients of information. There are several terms used in the Library and Information Science (LIS) literature to refer to users. Most of these terms are synonyms. To take an example, all the following terms including customer, member, client and patron imply the same concept, i.e., the user. According to eminent library science expert Kenneth Whittaker, a user is one 'who uses one or more of the services provided by a library'. Then again, according to well-known author on library science books Claire Guinchat, one should define a user based on two specific criteria:

  (i) Objective criteria, such as socio-professional category, specialist field, nature of the activity for which the information is sought, reason for using the information system, and so on

 (ii) Social and psychological criteria, such as the user's attitudes and values with regard to information in general and his relations with information unit in particular

According to Guinchat, the key factor is the reasons that lead to this specific behaviour in information seeking and communication, and his professional and

general social behaviours. According to Guinchat, users can be placed broadly in the following three groups:

(i) Users who do not participate in active life, like students

(ii) Users who hold a job and have information needs that are work related, classified on the basis of their main activities (services, production, development, research, management, and so forth) by branch of activity and/or specialist field (industry, agriculture, civil service, and so forth), and by level of education and responsibility (workers, technical staff, professional staff, and so on)

(iii) The ordinary citizen seeking general information

Another classification is provided by another library science expert Professor J. D. Bernal for users of technical and scientific information based on the type of information services that they require. A key aspect of Professor J. D. Bernal's grouping is to combine agriculturists, medical practitioners, architects and engineers in a single category which is of technologists. Furthermore, managers (industry as well as business) can be looked upon as being a separate group of information users. One more way in which users can be group is based on how they approach information. The classification in this regard could be as follows:

- Potential user - in need of information available from specific services

- Expected user - one who is known to have the intention of using certain information services

- Actual user - one who has actually used an information service regardless of the fact whether he derived advantage from such a service or not

- Beneficiary user - one who derives a measurable advantage from information services

The categorization of users as done by Indian mathematician and librarian Dr S. R. Ranganathan is based on the types of services enunciated by the user. The groups in his categorization are freshman, ordinary inquirer, specialist inquirer and general reader.

It must be recognized by a wise system designer that an information user needs to be an active participant in the system, and it is this user's needs that must be the basis of the design of the system and also further direct the system's design. So, it is for the information service to anticipate, match and be responsive to this clientele's needs and requirements. There will be some situations where the users are not completely aware of the advantages that can be gained from a specific service or system. This type of situation requires that the system designer guides the user to the pertinent aspects by providing a tailor-made service.

It is possible to distinguish between scientific and technical information system users. Such users fall into three broad groups based on the type of activity they perform. These groups are researchers, technicians and practitioners involved

with operational and/or developmental activities in the various technology fields, and planners, managers and other decision-makers who are engaged in coordinating development activities at international, national and even local level.

Characteristics of Users

As the key reason for conducting a user study is to collect information which will help with the design, provision and evaluation of specific information services or products geared towards the needs of specific users, it is imperative that one fully understands the user characteristics. Following is the list of groups under which one must study user characteristics:

1. Individual Characteristics

These user characteristics pertain to those factors in information users which affect:

- How they perceive as well as define the problem and how they describe the information that they require
- The specific manner in which it is most likely that they will make use of the information and what their capacity is for making use of a specific type of information

2. Stages of Information Diffusion

The stages of information diffusion are concerned with how much knowledge an individual (or a group of users) has with respect to some certain innovation or idea. At different stages, a user's information needs will be different due to which it is important that information services and products should be created specifically for every stage. This can only be done when there is a clear perception of the users' capabilities.

3. Environmental or Social Characteristics

Factors that fall within the social system, such as reference groups situation and norms, and which impact the communication and behaviour of an individual are grouped in the category of environmental or social characters pertaining to an individual (or group of) user(s). Having awareness with respect to these factors helps the designers of the system designer to know exactly what the users' information needs will be.

4. Communication Characteristics

Elements which are associated with using and diffusing information are referred to as communication characteristics. Information systems, communication channels, information structures and information sources are some examples of communication characteristics. It is essential that we correlate these aspects with other characteristics. The objective of a systematic and proper user study is the collection of all data that is pertinent for the users in respect of aiding in the creation

of such an information system which will be efficient and effective. With such data, it is possible to establish some close relationship between the users of information and the designers of information systems.

User Study Constituents

In LIS literature, the oldest reference to user studies is of the late 1930, to the one performed by library science theorist L. R. Wilson. His study was conducted not to gain information about library users and use of libraries, but was rather aimed at investigating the status and distribution libraries in America. It was at the 1stt conference of the Royal Society which took place in London that the concept of users and their information needs found some expression. A lot of attention was attracted by Professor J. D. Bernal's paper entitled 'The Transmission of Scientific Information: a User's Analysis'. In 1956, eminent theorist in library science R. R. Shaw conducted a pilot study on the use of scientific literature by scientists for the National Science Foundation. This study of his is looked upon as being a pioneering step towards user studies. After him, there has been the emergence of several comprehensive studies pertaining to the same subject.

To take an example, a bibliography was compiled by theorists Davis and Bail which comprised 438 studies of the same nature as early as in 1964. Records show that as early as in 1977, there had already been more than 1,000 important studies pertaining to the 'user studies' subject. Of importance is the fact that the growth of science and technology, and the importance accorded to the use of scientific information proliferated such attempts of user studies. Setting up of the centre for Research on User Studies (CRUS) in 1975 was a landmark event in the history of user studies. It was set up by the British Library at the University of Sheffield. The main aim was the creation of a national centre which would focus on research in user studies, and this goes to show how important the subject of user studies is.

User Studies: Need

Surveys for information need or user studies are useful since they have the potential to remove the type of information services that are required by users and the type that are available to them. There is a need to identify the requirements of users before building, running or even upgrading an information system. Nevertheless, doubt has been raised if it is possible to establish information needs of users by conducting user surveys and user studies. To take an example, it has been stated that information needs, as distinct from wants, cannot be determined through public opinion poll type surveys. Furthermore, it is established that the information service has to be considered to be a professional service (like medicine) distinctly different from consumer service (like breakfast food packaging) due to which information service users are not in a position to give appropriate guidance for either the designing or the betterment of information systems. When this view came up, emphasis shifted to improvement of methodologies and techniques of survey and user studies. It establishes the fact that there was a need to perform user studies as

an essential part of creating the design and operation of effective and efficient information systems, services and products.

User Study: Planning

For a user study to be successful and provide the required information, it is of prime importance that the study be well planned from start to finish. So, it becomes essential that first each stage is chalked out and then prior to implementation, for each and every step, a detailed plan is created in advance. It is also essential that the study's general objectives are also listed out in advance. During every work stage, some specific decisions would also be taken.

Steps of the Plan

A plan for performing a user study must at the minimum include the following steps:

(i) Studying the older surveys, studies and literature getting to know all of the aspects associated with user studies

(ii) Listing the study's objectives

(iii) Determining which variables will be studied and which model to use

(iv) Selecting the study's sample population

(v) Establish which method to use for data collection for the purpose of observation

(vi) Establishing which method will be employed for data analysis or observations

(vii) Determining the ways of presentation of data and utilization of the results including dissemination of such results

During the stage of establishing the study's objectives, it is essential to clearly specify what is needed to be found out from the study. It is this decision which will provide direction to the other stages.

User Study: Categories

It will be helpful to know that studies referred to as information use are an amalgamation of several different things. Studies of this nature broadly fall into four categories, which are as follows:

(i) Studies undertaken to ascertain the overall pattern of interaction that the user community has with the communication system, with no reference whatsoever to any specific information receiving event, fall in the category of communication behaviour studies.

(ii) Studies undertaken to establish the use of any communication medium, such as primary periodical and secondary periodical, are referred to user studies.

(iii) Studies undertaken to establish the pattern of flow of information in the science communication system as a whole fall in the category of studies in the flow of information.

(iv) Fourthly are the surveys and studies undertaken within the limited context of a library or an information centre, mostly to know to what extent its facilities and services are being used, with the final aim to better the services, system and facilities.

It is possible for a specific survey/study to have different aspects and, hence, objective setting fall in more than one of the above-mentioned categories. Therefore, in the process of objective setting, decision needs to be taken regarding what the exact nature of the survey/study is, keeping in mind the above-mentioned categories.

Methodologies/Techniques for User Studies

Once it had been established that a user study is a much needed element and decision had been taken regarding the relevant aspects (variables) that were to be studied, it was time to decide the method that would be used to perform the study. From sizable literature on the subject, it is evident that most of the general surveys, e.g., interview, questionnaire, diary, and so on, have also been extensively used by workers in the field of information use study.

There are various methods that can be picked from but those that have mostly been used can be broadly placed in the following categories:

- General or Conventional Methods which comprise:
    (a) Questionnaire
    (b) Interview
    (c) Diary
    (d) Observation by self
    (e) Operations research study
- Indirect Methods in the context of Information Use
    (f) Analysis of library records
    (g) Citation analysis
- Special and Unconventional Methods
    (h) Computer feedback
    (i) Unconventional methods

Which method will be the chosen one is dependent on the decisions that have been taken in the previous stages, such as the study's objectives and the variables that are to be the focus of the study. Method selection involves the following three prime aspects:

(a) Selection of a sample of user population

(b) Determining the procedures for collecting data from or about the sample

(c) Determining the procedures to analyse the data collected for summarizing or deriving results

It is of essence that all of the three aspects mentioned above should be studied carefully and then decisions should be made prior to getting into the actual implementation of the user study. The most often committed error in the case of user studies is data collection without previously establishing the manner in which analysis of the collected data is to be conducted. It has been proven that it is a wise and useful decision to consult a statistician during the process of selection of the appropriate methods for the user study to be conducted. If help is taken from a statistician, the results from the study will prove to be more useful than they would otherwise have been. Nevertheless, one must also ensure that the study does not just collect data that is statistically meaningless. In case of user population sample selection, one can choose from several available methods but the one used most commonly is convenience sampling. In convenience sampling, one generally just picks the first 25 or the first 50, and so, from those who come along as the subject of study. Another often used method is random sampling in which people are picked from a population for the study in a completely random manner. Another one of the much used methods is stratified sampling in which there is sub-dividing of the population into subgroups and then picking users for study at random. In the case of representative sampling, another method often employed, there is the prior determining of individuals, pairs of individuals or small groups with some characteristics in common as the subject of study. In the same way, several different methods are there which can be used for the purpose of data collection. Of these, the more commonly used ones are described below:

- **Surveying:** This method revolves around posing questions to users and documenting their answers directly from users and user studies pertaining to their preferences, conditions, values, attributes and/or behaviour. Surveying has been established as the method employed most often for user studies, even though its results are biased.

- **Observation:** This method uses direct observations on the communication behaviour of users in given situations, practices and time periods.

- **Records analysis:** In record analysis, written records and/or other artefacts of previous communications are obtained and inferences are derived from the same with reference to the users.

- **Experimentation:** In this method, there is the introduction of an element defined group of users. There might probably even be the comparing of the group with some other group where such an element had not been used.

Next, we need to identify the methods for data analysis. Any analysis will be considered to be an informal one when it comprises the need to obtain some feeling or impression of what is indicated by the data and what direction is indicated. In the case of formal analysis, the methods used most frequently are as follows:

- **Statistical analysis:** This has the application of standard statistical techniques that are used for the purpose of summarizing, comparing and testing for the significance of data that is numerically represented.

- **Semantic analysis:** This comprises the application of semantic techniques for the purpose of summarization and comparison of data that is verbally represented.

- **Psycho-social analysis:** This comprises the application of techniques from the anthropological, sociological or psychological field for the purpose of classification or for describing the data that has been gathered via the user study, and is then displayed representatively, logically or conceptually.

- **Economic analysis:** This involves the application of techniques from micro- or macro-economics for arriving at conclusions in economic terms on data expressed in all the above-mentioned ways.

Every one of the above-mentioned analysis techniques requires that there should be sufficient knowledge of the respective fields. There are standard statistical packages that can easily be procured to achieve the requisite results. Nevertheless, the use of those packages can be made only if the user has appropriate practical training. It is also possible to easily adapt the appropriate techniques from studies conducted in the past.

Criticism and Limitations of User Studies

In the past, the information needs of engineers, technologists and scientists have been assessed using a number of studies. Such information extracted proved to be complex and varied. Consequently, such studies were not able to completely fulfil their purpose of revealing the exact need and nature of the information required by the users. The studies display a priori approach to the entire problem and still a lot of work needs to be carried out in this direction.

The user surveys or studies that are conducted according to this approach have been under some criticism for the methods and techniques used. For example, the various studies have shown that the questions used for sampling of user studies did not yield the desired results. It can also be stated that the samples that were so carried out did not involve the various techniques of random sampling. Mostly the sample is based only on the questionnaire filled by a couple of group members who are interested in the same, while excluding the others and leading to erroneous results. Such errors need to be avoided in the sampling process. Further, the result of the sample is not only dependent on its size but also on its composition, particularly the environment to which the participants belong.

A critic has suggested that seven environments should be taken into consideration when carrying out a sampling process. Therefore, the samples collected should be a mix of:

- The government
- Political parties and trade unions
- Research institutes

- Industrial organizations

- Academic institutes

- Various broadcasting agencies including the press

- A large number of professional associations

In a similar manner, the organizations performing such research can also categorize the users according to the functions they perform and the duties they carry out. Therefore, such categories are as follows:

- Professionals performing social work and administrative duties

- Professionals working in different broadcasting agencies including the press

- Individuals involved in training and teaching

- Individuals performing administrative duties and social work

- Individuals involved in research activities

- Students involved in various facets of the learning process

- Management

- Politicians

- Professionals involved in trade and commerce

In most of the cases, these categories influence the behaviour and the information needs of the users. Certain other factors, such as psychological factors, in the form of intelligence or motivational levels of an individual along with the demographic factors, such as the behaviour, age or educational background of the people participating in the survey, also play an important role. Many a times, these factors influence the needs and information requirements of the users. Therefore, it is important to account for the psychology of the information users, including the following:

- Comfort of the participants about the different physical aspects of the information system being used

- The most preferred form of search product

- Amount of material not directly related to the survey

- Work habits of participants

- The comfort level of the users about the different physical aspects of the information systems

- The maximum search time that can be given to the information users

- Prior knowledge of the information system along with the reference tools being used

- Different terminological idiosyncrasies

Certain experts also stress the importance of a large number of individual variables in the information gathering and information seeking process. These individual variables that affect the individual behaviour include:

- Experience of the participants in any particular job
- Working in the individual capacity or as a part of a team—both big and small
- Their age
- Their background qualification
- Motivational levels of the participants
- Their thoroughness and persistence for a particular job

Experts in the field believe that with inclusion of the above-stated aspects, the information studies can lead to the minimization of the errors and shortcomings along with wide acceptance of the findings.

In 1948, Professor J. D. Bernal carried out his pilot study for the Royal Society's Scientific Information Conference. Since then, several information experts have tried to find out different methods used by engineers and scientists to extract the required information and put it to appropriate use. The study was based on the assumption that the system and tools used for information extraction need improvement, and this will form the basis for further improvised tools and techniques in future. Different samples of population have been used to conduct surveys or studies in different countries and at different levels.

In the years 1969–1989, sharing of resources though the LISA process was carried out, and the investigations and findings revealed the different areas in research and information studies, such as:

- Assessing the attitudes of the users
- Recording the direct observations of the users
- Carrying out experimental information services

Certain areas in information studies that made use of communication, which were not based on documents and facts, refinements and relevance and usage of information, were not very precise.

User Studies in India

Over the past three decades, India has been working in the direction of communication in science and user interface. To take an example, as far back as 1964, a user survey was conducted by Indian National Scientific Documentation Centre (INSDOC) pertaining to its current awareness service entitled 'INSDOC List of Current Scientific literature'. Due to this survey's findings, INSDOC was forced to close the current awareness service and begin compilation of 'Indian Science Abstracts'. Then again, in 1965 itself, a study was conducted pertaining to the use of Delhi University Library under the leadership of eminent librarian

Carl M. White. Again, in 1965, a seminar was conducted by the Indian Association of Special Libraries and Information Centres (IASLIC) entitled 'Users and Library and Information Service'. While no worthwhile study/survey resulted from the seminar, it did draw attention of the authorities of special libraries and information centres towards these problems.

A pilot survey was conducted by INSDOC in 1967 for assessing the information needs and potential of the research workers engaged in the 'electronics' field. The reason for conducting the survey was the formation of 'Electronics Information Grid'. The study made use of the questionnaire and interview technique. While the findings were by nature empirical, a report was published. Nevertheless, another worthwhile effort in this direction was the survey conducted at the Delhi University to determine the reading patterns, information needs and information gathering habits of the teachers and research scholars attached to the chemistry department of the University. Even this survey used the interview and the questionnaire technique, and its findings were in line with similar studies conducted outside India.

While libraries are there for the benefit of users, research in Indian librarianship has taken the user component of the system for granted. past few years have seen an depth and extensive customer related studies. Eminent library science theorist M. S. Sridhar was responsible for one such study. The doctoral research conducted by him pertained to the Information Seeking Behaviour (ISB) of the Indian Space Technologists (IST) of ISRO Satellite Centre (ISAC), Bangalore. Its results got published as 'Information Behaviour of Scientists and Engineers' and has made a huge contribution in user studies.

Check Your Progress

6. List the steps for performing a user study.

7. State the general or conventional methods for user studies.

8. What are the three prime aspects of method selection?

8.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The term 'user education' includes all such efforts and programmes that will, whether collectively or individually, instruct and guide the current and future, and even potential users, keeping the following goals in mind:

    (a) Recognizing own information needs

    (b) Formulating the recognized needs

    (c) Using the information services both efficiently and effectively

    (d) Making an assessment of these services

2. In 1948, the Royal Society Scientific Information Conference proposed a pattern for user education programmes and most of the academic user education programmes have adopted that pattern. According to this pattern, there should be one of the courses given to new students for making them familiar with the use of the library, and this should be furthered by advanced user courses which are based on the structure of the literature of their subject field.

3. In an ideal situation, user education would be an ongoing process comprising two components—orientation and instruction—which are brought together as per the needs and demands of the users.

4. The various aspects of bibliographic instruction are as follows:

   (a) Subject analysis

   (b) Indexing and abstracting periodicals

   (c) Library catalogues

   (d) Principles of knowledge organization

   (e) Search strategy

   (f) General types of reference works

5. The objectives and goals for the creation of a course can be segregate into three major categories: psychomotor, affective and cognitive. It is mostly in the affective and cognitive category that the objectives of a course for library user education are located. The goals that fall in the cognitive category are mainly associated with the understanding of the concepts.

6. A plan for performing a user study must at the minimum include the following steps:

   (a) Studying the older surveys, studies and literature getting to know all of the aspects associated with user studies

   (b) Listing the study's objectives

   (c) Determining which variables will be studied and which model to use

   (d) Selecting the study's sample population

   (e) Establish which method to use for data collection for the purpose of observation

   (f) Establishing which method will be employed for data analysis or observations

   (g) Determining the ways of presentation of data and utilization of the results including dissemination of such results

7. The general or conventional methods for user studies are as follows:

   (a) Questionnaire

   (b) Interview

   (c) Diary

(d) Observation by self

(e) Operations research study

8. Method selection involves the following three prime aspects:

(a) Selection of a sample of user population

(b) Determining the procedures for collecting data from or about the sample

(c) Determining the procedures to analyse the data collected for summarizing or deriving results

8.5 SUMMARY

- The Royal Society Scientific Conference has officially recommended that there must be a training on how to make use of scientific information.

- It is possible to look upon user education to be a programme or process that enables potential users of information to gain awareness on how valuable information is, and motivates them to make use of the various resources of information.

- The entire process of communication and information is associated with user education and the complete interaction of a user with a library is one of its parts.

- In an ideal situation, user education would be an ongoing process comprising two components—orientation and instruction—which are brought together as per the needs and demands of the users.

- User education, on the practical level, comprises the organizing of the various aspects of the courses, such as content of the course, timing of the course, timetabling, optimum group size and optimum duration for the course.

- The 'Library Arts College' concept was introduced by noted US librarian Louis Shores in 1934 and over the years, it began to be known as 'Library College'.

- The Council of Library Resources and Association of College and Research Libraries in the USA was the one to start the institutionalization of user education.

- The main thrust of all programmes pertaining to user education is towards academic institutions. The activities in America in this field focus on under-graduates, while in the UK, it focuses on students pursuing post-graduation or research.

- The objectives and goals for the creation of a course can be segregate into three major categories: psychomotor, affective and cognitive.

- In the field of user education, one major development is the increasing realization of the importance of setting objectives and goals when library user education is being planned.

- One way to stimulate the library users to actively use the information present within the library is to teach these users how the available materials can be used to gather information.

- Library user education is not part of a separate academic discipline. It comprises a set of skills that can be utilized similarly irrespective of what the subject of academic study might be.

- Methods that employ auditory simulation, visual simulation or the two of them combined can be used for the purpose of teaching. Methods that make use of just one channel of communication are considered to be less effective than those that employ the use of a combination of sensory inputs.

- One of the most used and common instruction imparting methods is a lecture. Lectures are considered to be a good way of teaching or imparting instruction to large groups of students.

- Nowadays, use of audio-visual (AV) media has been gaining tremendous ground in the learning-teaching process, and more specifically, in the education of library users.

- Both informational graphics and sign systems are extremely basic means available to instructors for providing orientation to users/students regarding library use.

- The process of online information retrieval is one that is interactive and it requires that specific attention should be given to such methods that will allow the display and experience of this interaction.

- Evaluation might range from the study of details, such as the use of given teaching methods or media, through the effects of specific courses, whole library instructional programmes to the extreme of general educational systems.

- The term 'illuminative evaluation' was coined by library science theorists Malcolm Parlett and David Hamilton.

- The categorization of users as done by Indian mathematician and librarian Dr S. R. Ranganathan is based on the types of services enunciated by the user. The groups in his categorization are freshman, ordinary inquirer, specialist inquirer and general reader.

- For a user study to be successful and provide the required information, it is of prime importance that the study be well planned from start to finish.

- Once it had been established that a user study is a much needed element and decision had been taken regarding the relevant aspects (variables) that were to be studied, it was time to decide the method that would be used to perform the study.

8.6 KEY WORDS

- **Scientific Information:** It is that part of technical information which is concerned with the study of natural phenomena.

- **User Education:** It refers to any effort, formal or informal, which will guide and instruct existing and potential users in the recognition and formulation of their information needs, in the effective and efficient use of information services and the assessment of source materials that can satisfy specific requirements.

- **Timetabling:** It is the act of scheduling something to happen or do something at a particular time.

- **Psychomotor:** It relates to the movement or muscular activity associated with mental processes, especially affects, as in psychomotor slowing associated with depression.

- **Auditory Simulation:** It is the use of focused sounds to produce an effect on the nervous system.

- **Sign System:** It is a key concept in semiotics and is used to refer to any system of signs and relations between signs.

8.7 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Briefly describe the function of user education.
2. What type of activities in user education have taken place in India?
3. Write a short note on media and methodology in user education.
4. What role do online education groups play in user education?
5. List the various characteristics of users.
6. Briefly describe the need for user studies.
7. What are the different categories of user studies?
8. Write a short note on the user studies in India.

Long Answer Questions

1. Explain the concept of user education. Moreover, discuss the various components of user education.
2. Describe the progression and purpose of user education.
3. Evaluate the various methods of imparting instructions.

4. Discuss the role of evaluation in user education programme.

5. 'The first step of prime importance in library user education for library services is to know the requirement of the users.' Discuss.

6. Explain the various user studies carried out for successfully implementing user education.

7. Critically analyze the various methodologies and techniques used for user studies.

8. Discuss the criticism and limitations of user studies.

8.8 FURTHER READINGS

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UNIT 9   ACADEMIC STAFF

Structure

9.0   INTRODUCTION

To provide excellent service to its patrons has always been the mission of librarians. While this has not changed, technology has added multiple dimensions to their responsibility. Keeping this in mind, staffing libraries appropriately, along with training and maintenance of a healthy working environment for librarian is a critical and specialized task. According to eminent author of *Management Principles and Practices* (New York: Macmillan, 1979), Mac Farland, 'Staffing is the function by which managers build an organization through recruitment, selection and development of individuals as capable employees.' Covering all levels from the managerial to the rank-and-file positions, staffing aims to build a structure for an organization, which can help fulfil present and future objectives.

The future of any organization depends on the quality of their personnel and their ability to work together effectively. Therefore, the right hiring makes the critical difference to the success of any organization. There is a desperate need to hire competent people, train them effectively and provide a conducive work environment for them to thrive. This will ensure that libraries will move to the next generation of technology, and provide the best services to students and those pursuing various academic interests.

In order to keep a balance between change and stability, it may also be a good idea to explore senior experienced librarians with knowledge of organizational history, who can be significant resources to help manage the change sweeping through libraries across the world. Their expertise can also be invaluable in identifying, recruiting and training newer entrants into the world of library management services.

9.1   OBJECTIVES

After going through this unit, you will be able to:

- Explain the pattern of the library staff and Ranganathan's general staff formula
- Describe the qualification of the library staff
- Discuss salary scales for staff in academic libraries

9.2   STAFFING PATTERN

In an academic library, the staff can be categorized into the following three levels:

(i) Professional staff

(ii) Paraprofessional staff

(iii) Supporting (administrative) staff

In the era of privatization and technological advancement, in order to provide modern library services, the librarian and educational administrators are required to rethink and identify the following:

(i) What models of organizing information can provide access to all through business enterprises?

(ii) What shall be the role of libraries in the context of democratization of information, i.e. information for all?

(iii) How to make the nation's major libraries as one, well knit, mega-system by liberating them from individual sovereign owners? Is individual and exclusive ownership of a library feasible anymore?

(iv) Is there justification any more for categorizing libraries into various types—academic, public and special?

(v) Can we not form a corporation of all libraries in each city and connect them as per state and region to make one national grid?

In a modern technological information society, all these factors have great significance and usefulness in the modern technological information society, and India is no exception. The theory of evolution works not only in case of biological life but also in case of evolution of institutions. The library movement started with types of libraries—academic, public and special libraries – with their vertical structure and government. Now, the cost factor, modern technology and new communication devices have forced the conversion or metamorphosis of vertical structure and government of libraries into a horizontal structure and resources.

The all-encompassing thought today is that libraries at one geographical location should be under one common corporate authority for rendering services to all through sharing. It can be considered as the Sixth Law of Library Science or the extension of the Fifth Law, as required. However, the fact being that sovereignty

of the parent institution over its library stands diluted. For example, the University of Delhi can no more possess its library system as exclusive. The modern librarianship is largely beyond the walls of the concerned library. Call it DELNET, BONET, CALIBNET or any net and hook-up of local, regional, national and international disposition.

We believe that it is under these vertical and horizontal dimensions that modern librarianship shall be required to thrive and grow. Historically speaking, such a metamorphosis is neither strange nor unnatural. Remember that three hundred years ago we had our individual wells for water supply and individual lanterns for our light supply. Today, we have a joint water supply corporation and a common electricity undertaking. Similarly, if we develop knowledge corporations, i.e., Bombay Information Undertaking, Delhi Information Corporation and the like in major towns of our country, academic libraries shall be required to take up leading roles in the new set-up.

Ranganathan's General Staff Formula

Like all processes, a mathematical formula for calculating staff strength can be enormously beneficial. Once such a formula is accepted by authorities, then increase of staff based on increase in scope of work becomes somewhat mechanical. General staff formula formulated by Dr S. R. Ranganathan has proved to be exceptionally valuable. This formula is applicable to different types of libraries.

In his book '*Library Administration*' (2nd edition), the formula given below has been recommended by Dr S. R. Ranganathan for staffing in a library:

(a) Professional staff

SB+ SC+ SL+ SM+ SP+ SR+ ST

(b) Non-professional skilled staff

B/30,000+ S/100

(c) Unskilled staff

SB/ 4+SC/ 2+SL+SM/4+SP/2+SR/8+A/20,000+D/500+B/60,000+ (S/100)/4+V/30,000

In the above formulae:

SB = Number of persons in book section

SB = A/6000 = Number of books accessioned in a year/6000

SC = Number of persons in circulation section

SC = G/1500 = Number of gate-hours for a year/1500

One gate hour = one counter gate kept open for one hour

SL = Number of persons as librarian and his deputies

HW/1500 = Number of hours library is kept open in day × Number of working days in a year/1500

SM = Number of persons in maintenance section

= A/3000 = Number of volumes accessioned in a year/3000

SP = Number of persons in a periodicals section

= P/500 = Number of periodicals currently taken/500

SR = Number of persons in reference section

= (R/50) (W/250) = (Number of readers per day/50) (Number of working days in a year/250)

ST = Number of persons in technical- that is classification and cataloguing- section.

= A+40D/2000 = Number of volumes accessioned in a year + 40 × Number of periodicals abstracted and indexed in a year/2000

B = Annual budget allotment in rupees

S = Number of seats for readers

A = Number of volumes accessioned in a year

D = Number of periodicals abstracted and indexed in a year

V = Number of volumes in the library

It may be noted that the staff requirement numbers for each section has been calculated on the basis of assumptions based on past experience. For example, the number of professionals required for a periodical section has been calculated and is based on the assumption that one professional is sufficient for procuring and recording 500 periodicals per year.

UGC Library Committee: The University Grants Commission (India) appointed a committee in 1957 under the Chairmanship of Dr S. R. Ranganathan to advice the UGC about development of university and college libraries and their organization.

The Library Committee laid down the strength of the staff for different sections in university and college libraries to be determined roughly on the following basis:

- **Book Section:** One person for every 6,000 volumes added in a year.
- **Periodical Publications Section:** One person for every 500 current periodicals taken.
- **Documentation Section:** One person for every 1,000 entries prepared in a year.
- **Technical Section:** One person for every 2,000 volumes added in a year.
- **Maintenance Section:** One person for every 6,000 volumes added in a year, one person for every 500 volumes to be replaced in a day, and one person for every 1,00,000 volumes in the library.

- **Administrative Section:** Minimum of one library accountant, one steno-typist and one correspondence clerk.

- **Reference Section:** One person for every 50 readers (other than the users of the text book collection) in a day.

- **Circulation Section:** One person for every 1,500 hours for which one gate of the library has to be kept open in a year.

- **Supervisory Section:** One Librarian and one Assistant or Deputy Librarian.

- **Unskilled Staff:** One Cleaner for every 30,000 volumes in the library, one Attendant each for every 6,000 volumes added in a year, for every 500 current periodicals taken, and for each of the shifts in the Circulation Section, besides unskilled and semi-skilled workers normal to any institution.

- **Comments:** Later on, S. R. Ranganathan suggested certain changes in the above mentioned norms as given below:

- **Periodical Publications Section:** 1,500 periodicals subscribed.

- **Documentation Section:** (to supplement the work done by the INSDOC (now NISCAIR) and the international abstracting services): 30 research workers (in the university).

- **Maintenance Section:** 1,500 volumes newly added, 50,000 volumes to be looked after by one person.

UGC Workshop (Khandala) (1979): The UGC Workshop on formulating standards for college libraries was held at Khandala from 5–7 March 1979. The recommendations made by the Workshop were considered and approved by the UGC Sub-Committee at its meeting held on 30 August 1979. The recommendations made by the Sub-committee regarding library staff is given below.

The basic staff for the college having the strength of 500 students and the collection of 5000 volumes in the library is mentioned below:

Librarian	1
Assistant Librarian	1
Library Assistant	2
Library Clerk-cum-Typist	1
Library Attendants	3
Total	**8**

Besides the above staff, the following additional hands depending upon the strength have been provided:

(i) For an increase of every 500 students' enrolment, 1 library assistant and 2 library attendants should be added.

(ii) Similarly, a college will be required to appoint 1 library assistant and 2 library attendants for every addition of 25,000 volumes up to the limit of 80,000 volumes.

(iii) When the strength of students exceeds 2000, one more Assistant Librarian and one Library Clerk should be appointed.

(iv) The figures mentioned above are based on the following tentative framework of the main functions that one expects to be carried out in the college library:

  (a) Acquisition of new books

  (b) Periodicals

  (c) Technical processing service

  (d) Reference service

  (e) Circulation of books

  (f) Maintenance

  (g) Administration

  (h) Supervisory work

  (i) Documentation

Delhi University Colleges

In Delhi University day college libraries, the following staff strength has been sanctioned by UGC (vide letter No. F.1-18/63(CUP) of 25.9.1964 and letter No. F.1-35/47(CU) of 18.2.1968):

Librarian	1
Professional Assistant	1
Library Assistant	2
Typist	1
Attendants (up to a collection of 15000 volumes)	2
Attendants (more than 15,000 and less than 30,000)	3

Note: If the collection is more than 30,000 volumes, then 4 attendants are provided. For an extended college (having more than 1500 students), 2 additional attendants are given. In case, a library opens for 12 hours, then 2 additional attendants are provided.

In Delhi University Evening Colleges, the following staff has been sanctioned:

Librarian	1
Library Assistant	2
Typist	1
Attendants (up to a collection of 15000 volumes)	2

Note:

 (i) In a collection of above 30,000 volumes, 4 attendants are provided, with 50 per cent of the attendants are placed in the senior scale.

(ii) Logically speaking, an evening college library should have the same number and level of staff as in day colleges. However, discriminations exist between day college and evening college libraries. There should be a common library for both the day college and the evening college, so long both were using the same premises. This provision would have required lesser staff and the savings could have been used on extending the library buildings, collections and the services.

AICTE (All India Council for Technical Education) is a statutory body established to properly plan and coordinate the development of technical education system throughout the country. The AICTE recommends the following as norms for the library of a technical institution which is having the initial stock of 4000 volumes of books and 36 journals (18 national, and 18 international (desirable):

Librarian	1
Library Assistant	1
Assistants	4

(*Source:* Handbook of Norms and Standards of AICTE, 1999)

In India, we have the following kinds of schools:

- Senior Secondary School/10+2 School
- Higher Secondary School
- High School/Secondary School
- Middle School
- Primary School

The pattern of staff required is given below:

Every middle/high/higher secondary/10+2 school should have a proper library. The minimum staff should consist of a librarian (library training plus BA) and one attendant. This minimum staff is essential.

The following staff is suggested for different levels of schools as norms:

Senior Secondary School	
Librarian	1
Assistant Librarian	1
Class D Staff	1
Secondary School	
Librarian	1
Assistant Librarian	1
Class D Staff	1

Middle School	
Librarian	1
Class D Staff	1

In a primary school, one of the school teachers can be made in charge of a library and given a short training. He/She can look after the library and provide library services on part time basis.

Norms of School Libraries

Competent and effective library staff is the fundamental requirement of any good school library. The extensiveness of the collection or the amount of budget or the spacious building fitted with modern amenities of a library is secondary to people who manage the library. A library is made truly effective and useful to students if there is a qualified trained librarian supported by other, equally trained staff members. If the number of school library staff is insufficient, or if the librarian lacks the qualifications that their work requires, it is certain that the school library will not be able to achieve its objectives.

In this regard, we can refer to the norms laid down by CBSE (Central Board of Secondary Education) as part of Affiliation Bye-Laws. The post of a librarian supported by necessary infrastructure must be created and filled to initiate young students in the use of books and other reading materials, and foster a permanent reading habit.

A minimum of two members of staff (Librarian + attendant) are essential in all school libraries irrespective of their size and age. In close access system of library service, even two staff members will not suffice. Moreover, the collection will be best used if the Library follows Open Access System. It encourages better use of the library.

The following library staff is recommended for different levels of schools having a strength of 2000 or less:

(a) For Secondary School, the library staff should consist of:

- 20 Librarian (TGT grade)
- One Assistant Librarian (Assistant Teacher Grade)
- One Library Attendant

(b) Senior Secondary School: The Library Staff of a Senior Secondary School should consist of:

- Senior Librarian (PGT Grade)
- One Librarian (TGT Grade)
- One Assistant Librarian (Assistant Teacher Grade)
- One Library Attendant

In case the number of students in a school crosses 2000, there should be a condition to appoint an additional Library Attendant for every 500 students or part thereof.

Check Your Progress

1. When was the UGC Library Committee set up?
2. What is the fundamental requirement of any good school library?

9.3 STANDARDS FOR ACADEMIC LIBRARIES

In this section, we will study the qualification of the library staff in detail.

Qualifications as per the Norms of UGC

The following section discusses the qualification criteria of the library staff as per the norms of the UGC:

University Librarian

(i) A Master's Degree in Library Science/Information Science/documentation with at least 55 per cent marks or equivalent grade of B in the UGC seven point scale and consistently good academic record set out in these Regulations

(ii) At least thirteen years as a Deputy Librarian in a university library or eighteen years' experience as a College Librarian.

(iii) Evidence of innovative library service and organization of published work.

(iv) Desirable: An M.Phil/Ph.D. Degree in library Science/Information Science/ Documentation/Archives and Manuscript-Keeping.

Deputy Librarian

(i) A Master's Degree in library science/information science/documentation with at least 55per cent of the marks or its equivalent grade of B in the UGC seven point scale and a consistently good academic record.

(ii) Five year experience as an Assistant University Librarian/College Librarian.

(iii) Evidence of innovative library service and organization of published work and professional commitment, computerization of library.

(iv) Desirable: An M.Phil/Ph.D. Degree in Library Science/Information Science/ Documentation/Archives and Manuscript-Keeping/Computerization of Library.

University Assistant Librarian/College Librarian

(i) A Master's Degree in Library Science/Information Science/Documentation Science or an equivalent professional degree with at least 55 per cent marks (or an equivalent grade in a point scale wherever grading system is followed)

and a consistently good academic record with knowledge of computerization of library.

(ii) Qualifying in the national level test conducted for the purpose by the UGC or another agency approved by the UGC.

(iii) However, candidates, who are, or have been awarded Ph.D. degree in accordance with the University Grants Commission (Minimum Standards and Procedure for Award of Ph.D. Degree), Regulations 2009, shall be exempted from the requirement of the minimum eligibility condition of NET/ SLET/SET for recruitment and appointment of University Assistant Director of Physical Education/College Director of Physical Education and Sports.

College Library

As per the norms of UGC and AICTE, the minimum qualifications for appointment to the post of a college librarian are given below:

Librarian

(i) Qualifying in the national-level test conducted for the purpose by the UGC or any other agency approved by the UGC

(ii) Master's Degree in Library Science/Information Science/Documentation or an equivalent professional degree with at least 55 per cent of the marks or its equivalent grade of B in the UGC Seven point scale plus a consistently good academic record computerization of library

School Library

Status of a school librarian should be the same as that of a school teacher. He should be at par with teachers having comparable qualifications, in the matter of salary and various facilities.

The minimum qualifications for library staff should be as given below:

- Librarian B.A. or B.Sc. and a degree in library and information science or equivalent diploma in library science
- Assistant Librarian Higher Secondary/Senior Secondary and Certificate in Library Science or Diploma in Library Science
- Class 'D' Staff Matriculate/High School with some experience in a library

Salary Scales

In this section, we will discuss the salary scale of the library staff.

University Library

The UGC recommended the following salary scales vide letter No. 1-32/2006-U.II/U.I(i) dated 31 December 2008:

(i) The post of Librarian shall be in the Pay Band of ` 37400–67000 with the Academic Grade Pay of ` 10000.

(ii) The existing conditions of eligibility and academic qualifications prescribed by the UGC shall continue to be applicable for appointment to the post of Librarian (University).

(iii) Deputy Librarian completing service of three years in the AGP of ` 9000 and otherwise eligible as per conditions prescribed by the UGC and if any by the university, shall also be eligible to be considered for appointment to the post of Librarian through open recruitment.

(iv) Incumbent Librarian (University) shall be placed at the appropriate stage as per the 'fixation formula' of the 6th CPC in the Pay Band of ` 37400–67000 with AGP of ` 10000.

College Library

The pay scale of librarians at different levels in a college library is as follows:

(a) Assistant Librarian/College Librarian:

   (i) Assistant Librarian/College Librarian in the pre-revised scale of pay of ` 8000–13500 shall be placed in the Pay Band of ` 15600–39100 with AGP of ` 6000.

  (ii) All existing conditions of eligibility and academic qualifications laid down by the UGC shall continue to be applicable for direct recruitment of Assistant Librarian/ College Librarian.

(b) Assistant Librarian (Sr. Scale)/College Librarian (Sr. Scale)

   (i) The posts of Assistant Librarian (Sr. Scale)/College Librarian (Sr. Scale) in the pre-revised scale of pay of ` 10000–15200 shall be placed in the Pay Band of ` 15600–39100 with AGP of ` 7000.

  (ii) Assistant Librarian/College Librarian possessing Ph.D. in Library Science at the entry level, after completing service of four years in the AGP of ` 6000, and if otherwise eligible as per guidelines laid down by the UGC, shall be eligible for the higher AGP of ` 7000 within the Pay Band of ` 15600–39100.

  (iii) Assistant Librarian/College Librarian not possessing Ph.D. but only M.Phil in Library Science at the entry level after completing service of five years in the AGP of ` 6000, if otherwise eligible as per guidelines laid down by the UGC, shall become eligible for the higher AGP of ` 7000.

  (iv) After completing service of 6 years in the AGP of ` 6000 Assistant Librarian/College Librarian without the relevant Ph.D. and M.Phil shall, if otherwise eligible as per guidelines laid down by the UGC and if any by the university, move to the higher AGP of ` 7000.

  (v) The pay of the existing Assistant Librarian (Sr. Scale)/College Librarian (Sr. Scale) in the pre-revised scale of pay of ` 10000–15200 shall be fixed in the Pay Band of ` 15600–39100 with AGP of ` 7000 at an appropriate stage based on their present pay.

(c) Deputy Librarian/Assistant Librarian (Selection Grade)/College Librarian (Selection Grade):

(i) Deputy Librarians who are directly recruited at present shall be placed in the Pay Band of ` 15600–39100 with AGP of ` 8000 initially at the time of recruitment.

(ii) On completion of service of five years, Assistant Librarian (Sr. Scale)/ College Librarian (Senior Scale) shall be eligible for the post of Deputy Librarian/equivalent posts in Pay Band of ` 15600–39100, with Academic Grade Pay of ` 8000, subject to their fulfilling other conditions of eligibility (such as Ph.D. degree or equivalent published work etc. for Deputy Librarian) as laid down by the UGC. They shall be designated as Deputy Librarian/Assistant Librarian (Selection Grade)/College Librarian (Selection Grade), as the case may be.

(iii) The existing process of selection by a Selection Committee shall continue in respect of promotion to the post of Deputy Librarian and their equivalent positions.

(iv) After completing 3 years in the Pay Band of ` 15600–39100 with an AGP of ` 8000, Deputy Librarians/equivalent positions shall move to the Pay Band of ` 37400–67000 and AGP of ` 9000, subject to fulfilling other conditions of eligibility laid down by the UGC and if any by the university.

(v) Assistant Librarians (Senior Scale) in universities/College Librarians (Senior Scale) in the AGP of ` 7000 not possessing Ph.D. in Library Science or equivalent published work but who fulfill other criteria prescribed by the UGC and if any by the university, shall also be eligible for being placed in the AGP of ` 8000.

(vi) Incumbents to the posts of Deputy Librarian/Assistant Librarian (Selection Grade)/College Librarian (Selection Grade) who have completed three years in the pre-revised pay scale of ` 12000–18300 on 1 January 2006 shall be fixed at an appropriate stage in the Pay Band of ` 37400–67000 with an AGP of ` 9000. They shall continue to be designated as Deputy Librarian/ Assistant Librarian (Selection Grade)/College Librarian (Selection Grade)

(vii) Incumbents to the posts of Deputy Librarian/ Assistant Librarian (Selection Grade)/College Librarian (Selection Grade) who have not completed the requirement of three years in the pre-revised pay scale of ` 12000–18300, for being eligible to be placed in the higher Pay Band of ` 37400–67000, shall be placed at an appropriate stage with Academic Grade Pay of ` 8000 till they complete three years of service as Deputy Librarian/ Assistant Librarian (Selection Grade)/ College Librarian (Selection Grade).

(viii) Pay in regard to the directly recruited Deputy Librarians shall be initially fixed in Pay Band ` 15600–39100 with AGP of ` 8000. They shall move to the Pay Band of ` 37400–67000 with AGP of ` 9000 after completing three years of service in the AGP of ` 8000.

(ix) The existing conditions of eligibility and academic qualifications prescribed by the UGC shall continue to be applicable for direct recruitment to the post of Deputy Librarian.

School Library

The qualifications required for the library staff in a school library are as follows:

(i) Senior Librarian: Master's Degree in Arts/Sc./Commerce + Degree or equivalent course in Library and Information Science or Master's Degree in Library and Information Science.

(ii) Librarian – Graduate with Degree or Diploma in Library and Information Science from a recognized Institute.

(iii) Assistant – Librarian Matriculation or equivalent with Certificate in Library and Information Science from a recognized Institute.

(iv) Attendant – Matric with experience in Library + Working knowledge of English.

9.3.1 Guidelines

The two sets of guidelines applicable for public libraries in India are:

- IFLA/UNESCO joint publication called 'The Public Library Service IFLA/UNESCO Guidelines for Development (IFLA publication 97)' and

- Bureau of Indian Standard (BIS) publication called 'Public Library: Guidelines.'

The former provides details of services and facilities to be provided by a public library whereas Bureau of Indian Standard or Public Library. Guidelines are a generally related to the administrative structure and governance of a public library in India. The BIS also lists some other Indian standards concerning libraries. These are standards on design of library buildings, specifications for library furniture and fittings including metal shelving racks, wooden shelving cabinets and library lighting. There are some more guidelines provided by the National Knowledge Commission's Working Group on Libraries (WGL). These are largely related to innovation of libraries and their services in the country.

Basic Norms to be followed in Public Libraries

IFLA/UNESCO Guidelines for Development (2001) draws out basic principles and guidelines to be adopted in order to run a fruitful public library system in a country. These guidelines have been categorized under six main heads:

- Role and purpose of public library

- The legal and financial frame work
- Meeting the needs of the users
- Collection development
- Human resource and
- Management and marketing of public libraries

A public library is a regionally established facility fulfilling intellectual needs of the local public and functioning within the framework of the community. Based on the location of the library, the following guidelines have been formulated to give assistance to librarians in various locations to cultivate an operational public library service keeping in mind needs of the local community.

Library Standards for Different Libraries

1. Rural libraries

As regards norms for rural public libraries in India, the following minimum configuration must be adopted in order to cater to the basic needs of the village:

Space - 1000 sq.ft.

Number of books – 6000

Periodicals and newspapers – 10

Reading seats – 25

Internet workstations – 5

The collection must also have audio visual material e.g., CDs and DVDs. The library must be able to provide some fundamental services depending on regional needs like lending, reference, Xeroxing, skill development training programmes like personality development and communication, social events, children's section, training to users, etc.

2. Urban library

An urban library in a municipal city, town or district must be built based upon the number of residents of the place. The following least arrangements are however mandatory:

Space - 5000 sq.ft.

Number of books - 10,000

Periodicals and newspapers – 50

Reading seats – 50

Internet access points- 10

Other than catering for basic library services, urban libraries must have some extra activities and services which should have been designed in view of the requirements of the local community. Existing library buildings must be given a refurbishment in order to attract more and more patrons towards them. All libraries

must have a provision of clean toilets, safe drinking water and space to park vehicles (for patrons as well as staff).

The overall atmosphere of a library is extremely important to boost a person's intellectual capability. An attractive exterior, an appealing interior with up-to-date and comfortable furniture, attractive and accessible fittings, a pleasant and creative design with appropriate signage are important components of an ideal public library.

According to IFLA/UNESCO guidelines, library services must be bodily reachable to all members of the community. For this, there is a requirement of a well-constructed library building, decent reading and learning facilities along with appropriate equipment and convenient hours suitable for different library users. The place where the public library is situated and its service outlets are very important factors. These should not be very far from public transport locations and city centres frequently visited by the general public for example cultural centres, commercial centres and shopping centres. Whenever possible a public library must share its premises with other public institutions like art galleries, museums and community centres.

3. Library services for differently abled

Library services for the differently abled have been discussed at length in the chapter above. Let us have a quick look at the basic needs fulfilment of differently-abled people in libraries:

- Availability of books and other documents in Braille
- Availability of library staff to read out to visually impaired patrons
- Availability of audio material in form of CDs, DVDs etc.
- Construction of ramps for wheel chair accessibility
- Construction of special toilets
- Construction of special reading corners for wheelchairs to fit in comfortably
- Easy access for all patrons with different needs to the entire library
- Availability of special library materials for ready reference of people with special needs

4. Norms for modernization

National Knowledge Commission Working Group has suggested a Library Charter for every library for the projection of their aims. i.e., dissemination of knowledge; to provide service in order to enable creation of new knowledge; to enable best use of knowledge by all strata of society and to ensure availability of need based relevant intellectual data to all patrons of the library. All public libraries must be equipped with good, high speed internet access. Minimum 2 and maximum 15 internet stations specially related to occupational and educational opportunities should be made available, based on the number of staff members and patrons of each individual public library. According to IFLA/UNESCO Guidelines, public libraries are equipped with a prospect to assist people in being a part of this global

convention and to lessen the so called 'the digital divide'. Libraries can accomplish this by making information technology available for public access, by educating about basic computer skills and by joining in programs to counter illiteracy.

5. Setting standards of public libraries

In a place like a public library which is utterly information intensive, there is a need to be sensitive to the requirement of application of standards so that uniform practices and measures are adopted which can be shared with other libraries also. Likewise, if the uniform standards are known to one particular public library, other libraries can benefit by making use of similar standards. I accordance with the guidelines provided by IFLA/UNESCO, keeping the objective of implementation of a countrywide library organization and support strategy, regulation and strategic planning must also describe and encourage a national library network founded on approved service standards. The library and information science standards thus set will be able to achieve the following purposes:

- Bibliographic control
- Exchange of bibliographic records
- Description of bibliographic items

In the contemporary ICT period, standards enable communication between various library systems to facilitate access and resource sharing of among different libraries. The set standards ensure achievement of compatibility and interoperability between equipment, data, practices and procedures for the purpose of universal availability of information. Moreover, standardization has made it possible for libraries to set their goals towards achieving Universal Bibliographic Control which is founded on the principle of cataloguing or doing a work only once in the source country and which is recorded and made available to different libraries all across the world. Following measures can be adopted by public libraries for maximum effectiveness:

- Make common use of their print and electronic library material and resources and databases
- Have combined buying contracts for information services
- Give encouragement to willing common development and expansion of information resources and expertise

Following are some information technology related standards which must be complied by all library managers:

- Z39.50 (Resource sharing protocol); ODMA (Application to interface seamlessly with document management client);
- MARC 21 (Format for bibliographic data);
- ISO-ILL (Inter Library Loan);
- Dublin Core (metadata Scheme);

- OAI-PMH (The Open Archives Initiative Protocol for Metadata Harvesting); and

- OWL (standard for ontology).

Check Your Progress

3. State the qualifications of a University Librarian.

4. List the minimum qualifications for library staff.

9.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The UGC Library Committee was set up by the University Grants Commission (India) in 1957 under the Chairmanship of Dr S. R. Ranganathan to advice the UGC about development of university and college libraries and their organization.

2. Competent and effective library staff is the fundamental requirement of any good school library. The extensiveness of the collection or the amount of budget or the spacious building fitted with modern amenities of a library is secondary to people who manage the library.

3. A University Librarian should have a Master's Degree in Library Science/ Information Science/documentation with at least 55 per cent marks or equivalent grade of B in the UGC seven point scale and consistently good academic record set out in these Regulations.

4. The minimum qualifications for library staff should be as given below:

    - Librarian B.A. or B.Sc. and a degree in library and information science or equivalent diploma in library science

    - Assistant Librarian Higher Secondary/Senior Secondary and Certificate in Library Science or Diploma in Library Science

    - Class 'D' Staff Matriculate/High School with some experience in a library

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9.5 SUMMARY

- In an academic library, the staff can be categorized into the following three levels:

    (i) Professional staff

    (ii) Paraprofessional staff

    (iii) Supporting (administrative) staff

- Like all processes, a mathematical formula for calculating staff strength can be enormously beneficial. The General staff formula formulated by Dr S. R.

Ranganathan has proved to be exceptionally valuable. This formula is applicable to different types of libraries.

- In his book '*Library Administration*' (2nd edition), the formula given below has been recommended by Dr S. R. Ranganathan for staffing in a library:

  (a) Professional staff

  $SB+ SC+ SL+ SM+ SP+ SR+ ST$

  (b) Non-professional skilled staff

  $B/30,000+ S/100$

  (c) Unskilled staff

  $SB/ 4+SC/ 2+SL+SM/4+SP/2+SR/8+A/20,000+D/500+B/60,000+$

  $(S/100)/4+V/30,000$

- The University Grants Commission (India) appointed a committee in 1957 under the Chairmanship of Dr S. R. Ranganathan to advice the UGC about development of university and college libraries and their organization.

- AICTE (All India Council for Technical Education) is a statutory body established to properly plan and coordinate the development of technical education system throughout the country.

- Competent and effective library staff is the fundamental requirement of any good school library. The extensiveness of the collection or the amount of budget or the spacious building fitted with modern amenities of a library is secondary to people who manage the library.

- A minimum of two members of staff (Librarian + attendant) are essential in all school libraries irrespective of their size and age.

- Status of a school librarian should be the same as that of a school teacher. He should be at par with teachers having comparable qualifications, in the matter of salary and various facilities.

- The two sets of guidelines applicable for public libraries in India are:

  o IFLA/UNESCO joint publication called 'The Public Library Service IFLA/UNESCO Guidelines for Development (IFLA publication 97)' and

  o Bureau of Indian Standard (BIS) publication called 'Public Library: Guidelines.'

- A public library is a regionally established facility fulfilling intellectual needs of the local public and functioning within the framework of the community. Based on the location of the library, guidelines have been formulated to give assistance to librarians in various locations to cultivate an operational public library service keeping in mind needs of the local community.

9.6   KEY WORDS

- **Paraprofessional:** It refers to a person to whom a particular aspect of a professional task is delegated but who is not licensed to practise as a fully qualified professional.
- **Rank-and-File:** It refers to the placement of staff in an ascending or descending order according to importance.
- **Privatization:** It means the transfer of a business, industry, or service from public to private ownership and control.
- **Metamorphosis:** It means a change of the form or nature of a thing or person into a completely different one.

9.7   SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What are the two sets of guidelines that govern public libraries?
2. Write a short-note on the salary scale of library staff.
3. What are the basic norms that should be followed in public libraries?

Long Answer Questions

1. Explain the staffing pattern generally followed in academic libraries. Support your answer with the formula recommended by Dr S. R. Ranganathan for staffing in a library.
2. Discuss the qualification criteria of the library staff as per the norms of the UGC.
3. Evaluate the salary scale of the library staff as per the recommendations of the 6th Central Pay Commission.

9.8   FURTHER READINGS

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BLOCK - IV
LIBRARY AUTOMATION AND DIGITAL LIBRARY

UNIT 10 LIBRARY AUTOMATION

Structure

10.0 INTRODUCTION

In this unit, you will learn about library automation and management. A library is an interface between users and information resources. Libraries are engaged in transfer of knowledge, without which no worthwhile teaching, learning and research is possible. The rapid growth in literature, the growth in specialization in various disciplines and the emergence of the inter-disciplinary nature of research has created a complex situation in organizing libraries. Moreover, the major concern of modern libraries is to provide better services than ever before. Just increasing the services quantitatively is not a solution. Quality of the service is demanded from the users. Qualitative improvement implies improvement in timeliness, relevance and preciseness of the services. This complex situation and tremendous pressure has forced the modern libraries to find a solution for managing the libraries more efficiently with limited resources.

Thus, the libraries are now making use of computers and other technologies for automating their various functions and services. Automation of the library helps take some of the workload from librarians and other staff members in the areas of acquisitions, cataloguing and circulation, which in turn allows them to better serve their patrons. This extra time can lead to more programs being facilitated in the library and make library staff available to answer reference questions and help people who having trouble researching or finding the right information. Automated cataloguing standards, such as MARC (Machine Readable Cataloguing), allow for quicker cataloguing of library items. Not only does this allow the librarian more

time to dedicate to improving customer service but it also makes the sharing of materials from location to location much easier and much more affordable.

A library management system, also known as an automated library system, is software that has been developed to handle basic housekeeping functions of a library.

Library automation is the general term for Information and Communications Technologies (ICT) that are used to replace manual systems in the library. An Integrated Library System (ILS), also known as a Library Management System (LMS), is an enterprise resource planning system for a library, which is used to track items owned, orders made, bills paid and users who have borrowed. An important aspect of library management is planning and maintaining library facilities. Planning the construction of new libraries or remodelling those that exist is integral as user needs are often changing. To supplement their operating budget, managers often secure funding through gifts and fundraising. Some other facilities include cafes, Friends of the Library, and exhibit spaces to help generate additional revenue. These venues must be taken into account when planning for building expansions. The site for new construction must be located; the building must be designed, constructed, and then evaluated. Once established, it is important that the building is maintained on a regular basis. This can also be accomplished by delegating tasks to maintenance personnel or hiring an outside company through bids.

10.1 OBJECTIVES

After going through this unit, you will be able to:

- Describe the history of library automation
- Examine the concept and need for library automation
- Discuss library automation in India
- Explain the impact of information technology on academic libraries

10.2 AUTOMATION IN ACADEMIC LIBRARIES

Earlier, when library automation had not been introduced, many library users, and librarians too, used to be frustrated as it took a lot of time to look for a book; moreover, users would have to stand in long queues to be served. However, now with library automation taking the center stage, most libraries do not have to experience the difficult times they faced earlier. Now, they focus on improving the experiences of the library users.

An automated library is one where computers are used to manage one or more functions of a library, such as acquisitions, serials control, cataloguing, circulation and public access catalogue. However, in the past centuries, before the

advent of the computer age, visionaries developed devices to assist in book lending systems. Even as far back as 1588, the invention of the 'Book Wheel'—a type of rotating bookcase—developed by Italian military engineer Agostino Ramelli, allowed scholars to read a variety of heavy books in one location with ease. The books are rotated vertically similar to the motion of a water wheel, as opposed to rotating on a flat table surface.

Another interesting example was the 'Book Indicator', developed by well-known engineer Albert Cotgreave in 1863. It housed miniature books to represent actual books in the library's collection. The miniature books were part of a design that made it possible to determine if a book was in, out or overdue. These and many more examples of early ingenuity in library systems exist.

(i) **The Beginning of Library Automation (1930–1960):** It is said that library automation development began in the 1930s when the punch card system was implemented in library for circulation and acquisitions. During the '30s and early '40s, progress on computer systems was slow which is not surprising, given the depression and World War II. In 1945, American engineer Vannevar Bush envisioned an automated system which could store information, including books, personal records and articles. Bush wrote about a hypothetical 'memex' system which he described as a mechanical library that would allow a user to view stored information from several different access points and look at several items simultaneously. His ideas are well known as the basis for hypertext and computers for their operations. They first appeared at MIT (Massachusetts Institute of Technology), in 1957, with the development of COMIT (Compilers at MIT), managing linguistic computations, natural language and the ability to search for a particular string of information. Librarians then moved beyond a vision or idea for the use of computers; given the technology, they were able make great advances in the use of computers for library systems.

(ii) **Library Automation Officially Underway (1960–1980):** The advancement of technology leads to an increased use of computers in libraries. In 1961, a significant invention by American engineers Robert Noyce of Intel and Jack Kirby of Texas Instruments, working independently, was the integrated circuit. All the components of an electronic circuit were placed onto a single 'chip' of silicon. This invention of the integrated circuit and newly developed disk and tape storage devices gave computers the speed, storage and ability needed for online interactive processing and telecommunications. The new potential for computer use guided one librarian to develop a new indexing technique. (Computer scientists) H. P. Luhn, in 1961, used computer to produce the 'Keyword In Context' (KWIC) index for articles appearing in Chemical Abstracts. Although keyword indexing was not new, it was found to be very suitable for the computer as it was inexpensive and it presented multiple access points. Through the use of

Luhn's keyword indexing, it was found that librarians had the ability to put controlled language index terms on the computer.

By the mid-60s, computers were being used for the production of machine readable catalogue records by the Library of Congress (LOC). Between 1965 and 1968, LOC began the MARC I (Machine-Readable Cataloging) project, followed quickly by MARC II. MARC was designed as a way of 'tagging' bibliographic records using 3-digit numbers to identify fields. For example, a tag might indicate International Standard Book Number (ISBN), while another tag indicates 'publication date,' and yet another indicates 'Library of Congress subject headings', and so on. In 1974, the MARC II format became the basis of a standard incorporated by NISO (National Information Standards Organization). This was a significant development because the standards created meant that a bibliographic record could be read and transferred by the computer between different library systems.

The Advanced Research Projects Agency Network (ARPANET), a network established by the Defense Advanced Research Projects Agency in 1969, brought into existence the use of e-mail, Telnet and FTP (File Transfer Protocol). By 1980, a sub-net of ARPANET made MELVYL, the University of California's online public access catalogue, available on a national level. ARPANET became the prototype for other networks, such as Computer Science Network (CSNET), Because It's Time Network (BITNET) and EDUCOM. These networks have almost disappeared with the evolution of ARPANET to NSFNET (National Science Foundation Network) which has become the present-day Internet.

During the 1970s, the inventions of the integrated computer chip and storage devices caused the use of minicomputers and microcomputers to grow substantially. The use of commercial systems for searching reference databases (such as DIALOG) began. The Bibliographical Automation of Large Library Operations (BALLOTs) was introduced in the 1970s as one of the first commercial systems for searching reference database. Later, it became the foundation for the Research Libraries Information Network (RLIN). A BALLOT was designed to integrate closely with the technical processing functions of the library and contained four main files:

(a) MARC records from LOC

(b) An in-process file containing information on items in the processing stage

(c) A catalogue data file containing an online record for each item

(d) A reference file

Further, it contained a wide search retrieval capability with the ability to search on truncated words, keywords and LC subject headings, for example, OCLC (Online Computer Library Centre) began in 1967, chartered in the

state of Ohio. This significant project facilitated technical processing in library systems when it started its first cooperative cataloguing venture in 1970. It went online in 1971. Since, that time, it has grown considerably, providing research and hypermedia.

In order to have automation, there must first be a computer. The development of the computer progressed substantially from 1946 to 1961, moving quickly though a succession of vacuum tubes, transistors and finally to silicon chips.

From 1946 to 1947, two significant computers were built. The ENIAC I (Electronic Numerical Integrator and Calculator) computer was developed by computer scientists John Mauchly and J. Presper Eckert at the University of Pennsylvania. It contained over 18,000 vacuum tubes, weighed thirty tons and was housed in two stories of a building. It was intended for use during World War II but was not completed on time. Instead, it was used to assist the development of the hydrogen bomb.

Another computer, EDVAC (Electronic Discrete Variable Automatic Computer) was designed to store two programs at once and switch between the sets of instructions. A major breakthrough occurred in 1947 when Bell Laboratories replaced vacuum tubes with the invention of the transistor. The transistors decreased the size of the computer, and at the same time, increased the speed and capacity. The UNIVAC I (Universal Automatic Computer) became the first computer using transistors and was used at the US Bureau of the Census from 1951 until 1963. Software development also was in progress during this time. Operating systems and programming languages were developed for the computers being built. Librarians needed text-based computer languages, different from the first numerical languages invented for the number crunching 'monster computers', in order to be able to use colities designed to provide users with the ability to access bibliographic records, scientific and literary information, which continues to the present.

(iii) **Library Automation 1980–present:** The 1970s were the era of the dummy terminal that was used to gain access to mainframe online databases.

The 1980s gave birth to a new revolution. The size of computers decreased; at the same time, technology provided faster chips, additional RAM (Random Access Memory) and greater storage capacity. The use of microcomputers during the 1980s expanded tremendously, especially homes, schools, libraries and offices of many Americans. The microcomputer of the '80s became a useful tool for librarians who put them to use for everything from word processing to reference, circulation and serials.

OPAC (Online Public Access Catalogue) began to be used extensively in the 1980s. Libraries started to setup and purchase their own computer systems as well as connect with other established library networks. Many

of these were not developed by the librarians themselves, but by vendors who supplied libraries with systems for everything from cataloguing to circulation. One such online catalogue system is the CARL (Colorado Alliance of Research Libraries) system. Various other software became available to librarians, such as spreadsheets and databases for help in library administration and information dissemination.

The introduction of CD-ROMs (Compact Disk Read Only Memory) in the late 1980s has changed the way libraries operate. CD-ROMs became available containing databases, software and information previously only available through print, making the information more accessible. Connections to 'outside' databases, such as OCLC, DIALOG (an operational online reference retrieval system) and RLIN (Research Libraries Information Network) continued; however, in the early 1990s, the databases that were previously available online became available on CD-ROM, either in parts or in their entirety. Libraries could then gain information through a variety of options. The nineties are giving rise to yet another era in library automation. The use of networks for e-mail, FTP, Telnet, the Internet and connections to online commercial systems has grown. It is now possible for users to connect to the libraries from their home or office. The World Wide Web, which had its official start date as April 1993, is becoming the fastest growing new provider of information. It is also possible to connect to international library systems and information through the Internet and with ever improving telecommunications. Expert systems and knowledge systems have become available in the '90s as both software and hardware capabilities have improved.

The technology used for the processing of information has grown considerably since the beginning of the thirty-ton computer. With the development of more advanced silicon computer chips, enlarged storage space and improved capacity telecommunication lines, the ability to quickly process, store, send and retrieve information is causing the current information delivery services to flourish.

10.2.1 Library Automation in India

The introduction of CD-ROMs in the late 1980s has changed the way libraries operate. CD-ROMs became available containing databases, software and information previously only available through print, making the information more accessible. The Indian Statistical Institute, Calcutta, was first in India to install a computer system in 1955 and to develop indigenous computer in 1964. In India, computers were used in library work for the first time possibly by the Indian National Scientific Documentation Centre (INSDOC) when they computerized the author and subject indexes of 'Indian Science Abstract' in 1965. In 1967, the INSDOC brought out the 'Roster of Indian Scientific and Technical Translators' with the help of computers under the title 'Regional Union Catalogue of Scientific Serials, Bombay-Poona' in 1973. In 1978, INSDOC initiated SDI (Selective Dissemination of Information) service as a NISSAT (National Information System

on Science and Technology) project with Chemical Abstracts and Information Service in Physics, Electro-technology, Computers and Control (INSPEC) databases, with the use of CAN/SDI software of IIT, Madras. In 1970s, many libraries ventured in preparing computerized databases. Through the initiative and financial support of NISSAT, many library networks were initiated and are operative. Notable of these networks are CALIBNET (Calcutta Library Network), DELNET (Developing (formerly Delhi) Library Network and PUNET (Pune Library Network), and so on.

Library automation began in the 1930s when punched card equipment was implemented in library for circulation and acquisition. Computer scientist Harley E. Tillet began experiments for storage and searching of a coordinating index using an IBM 70s. Soon after this, machine arrived in September 1953. In 1954, Tillet presented his report in IBM Computational Seminar at Endicott, New York. This paper was the first report on library related computerization.

Present Scenario

Today, we are living in the age of IT (Information Technology). The storage and retrieval of information has taken various forms and formats, such as online databases, microfilm/fiche, telecommunications facilities, video-text, and so on. Now a modern university library has to provide a package of many related services with the help of computer networking. Only by introducing such new technologies in university libraries, we can provide better information services to user community. In the Indian scenario, the situation of university library is not very encouraging. Majority of automation projects have been marred by financial crunch, acute shortage of qualified professionals and apathy of general administrators. In spite of the fact that Government of India has highlighted the need for automation of libraries on regular basis, particularly in the five year plans and in the approach paper of newly constituted task force on IT, the progress remains dissatisfying largely due to strategic lapses, lack of dedication and inadequate digital mentality both among librarians and the administrators. However, the role of INFLIBNET (Information and Library Network) center for linking libraries and information centres in university systems as well as in the R&D (Research and Development) libraries is worth mentioning. Contemplated in 1988 by UGC (University Grants Commission), it is one of the pioneering efforts on national level for cooperative usage of information to improve capability in information transfer and access that provides support to scholarship, learning, research and academic pursuits.

Library Automation: The Concept

The term 'automation' has been derived from the Greek work automese which means something has the power of spontaneous motion or self-movement. The term 'automation' was first introduced by D. S. Hardar in 1936, who was then with the General Motor Company in the United States. He defined it as, 'The

automatic handling of parts between progressive production process' in relation to engineering industries. Since then, the term has been applied to a variety of automatic machinery and automatic systems, and is commonly used to describe any operation in which there has been a substantial substitution of controlled action for human efforts or intelligence.

Automation

The modern usage of the term 'automation' is not in vogue in the above scene. Automation is:

According to McGraw Hill Encyclopaedia of Science and Technology (1982), automation is 'a coined word having no precise generally accepted technical meaning but widely used to imply the concept, development, or use of highly automatic machinery or control systems'.

From the above definition, one can observe that 'automation' is the application of 'machines' to perform a task with minimum human intervention.

However, the term 'automation' is defined by Encyclopaedia of Computer Science and Technology as 'In business world, the words 'automation' and computers are often used synonymously …'

Most of the literature on automation uses the term 'automation' in the above sense. Thus, we can conclude that modern usage of the world 'automation' implies predominantly the use of 'computers' and other modern technologies for any application system.

Library Automation: In Literature

The term 'library automation' is being used in literature for the last four decades.

A perusal of the literature would indicate that many authors have not tried to define the term explicitly. However, they use the term 'library automation' to mean the use of computers as an aid for library activities.

According to Webster's Third New International Dictionary of English Languages, automation is 'the techniques of making an apparatus, a process or a system operate automatically'. In other words, it is the machinery that mathematically manipulates information storing, and selects, presents and records input data or internally generated data. Mechanization of library housekeeping operations predominantly by computers is known as library automation.

According to Encyclopaedia of Library and Information Science, 'Automation is the technology concerned with the design and development of process and system that minimize the necessity of human intervention in operation.'

Library automation in its broadest sense can be taken to mean the deployment of machines for library processes. In general, however, library automation has come to mean the application of computers and related data processing equipment to libraries.

Computer scientists Robert M. Hayes and Joseph Becker have defined the term more comprehensively. According to them, the areas of library automation include:

(i) The application of data processing equipment to do/or support the clerical/repetitive functions found in technical processing, circulation control and serials control;

(ii) The application of data processing equipment to the fields of information storage and retrieval, automatic indexing and abstracting, in reference work; and

(iii) The application of computers/data processing equipment for operation research and systems analysis.

The first part of the above definition deals with the automation of housekeeping activities in libraries.

The second part of the definition deals with the application of computer for online and offline information storage and retrieval.

The third part of definition concerns with the application of computers as an aid in using the principles of scientific management in library administration.

Inference of Definitions

The meaning and scope of the term 'library automation' is changing or being modified right from its inception. Even today, perhaps, there is no universally accepted and comprehensive definition. Thus, we can conclude that the term 'library automation' is still evolving. However, as on today, the scope of library automation includes the application of computers and other modern technologies to:

(i) Operations: Housekeeping operations, such as acquisition, cataloguing, circulation, serials control, and so on.

(ii) Library Services: CAS (Current Awareness Service), SDI (Selective Dissemination of Information), Abstracting, Indexing, and so on.

(iii) Office Work: Usually termed as office automation.

(iv) Management Information System (MIS): MIS in which computers are used as a tool for scientific management of libraries/information centres.

Library automation, stated in single term, is the application of computers and utilization of computer-based product and services in carrying out different library operations and functions in provision to various services and production of output products. There is a great impact of computers and information technology, and its application on the libraries due to which a process of great change is taking place in libraries. Modern technology is tending to alter the nature of our society radically and affect the prevailing economic, political and social values, and libraries are also in the process. Industrialized countries were the first to realize that in the context of stock of knowledge, classical approaches relating to storage, retrieval

and utilization of the information were no longer adequate and effective, and that the solution lay in making fullest use of new developments in electronics, computer, telecommunications and micro-recording, and so on.

Our country is very much behind in application of computers in library operations and services. The reasons could be many; however, now the situation has changed a lot. Conditions are turning to be favourable and also the government is laying great emphasis on computerization, which includes libraries as well. Above all, library professionals are getting motivated and showing keenness to get trained to take up computer-based work.

Library automation implies mechanization of various routine and repetitive functions and operations to be performed by human beings. With automation, the human intervention is reduced to a certain extent. The appearance of computer has greatly increased the library automation. In addition to computer advancement, telecommunication and audio-visual technologies gave way to new possibilities of information handling in India; the use of computers is limited to only some specialized libraries unlike the case of developed countries. Library automation includes use of computers and other semi-automatic devices like punched cards to reprography. These are semi-automatic because human intervention is greater in extent. So, when we talk of library automation, these days, it is principally the use of computers, computer-based products and services in library work.

10.2.2 Opinions for Library Automation

Opinions of eminent library scientists and information professionals, who have been the pleaders and users of library automation, are cited as follows:

Dr J. H. Shera, Dean, School of Library Science, Western Reserve University, Ohio lays stress upon the use of machines in libraries.

1. Solution of Staff Shortage and Reduction in Mistakes

Mechanization and automation of libraries offer an important solution to library staff shortage. It will lead to distinct reduction in the number of mistakes made in libraries.

2. Higher Rate and Better Quality of Tasks

Equipment and systems will perform tasks, which people can do but at the rate and quality which people cannot match. The machines will permit kinds and qualities of work to be undertaken which would be beyond the resources of libraries even with almost unlimited power.

3. Reduction in Time

Preparation of concordances is a lifetime process, which can now be accomplished in months through the use of punched cards or magnetic tape and equipment.

- **Taylor (G. M.) Arkansas State University: More Items Less Cost**

According to Taylor, justification of the feasibility of the mechanized system is measured in terms of increased capability to acquire and process increasingly numbers of items annually for library, and this is done with decreasing cost per item.

- **Jahoda & Accola**

Published reports of twenty-five projects, surveyed by Jahoda (G.) and Accola (F. A.) for utilizing Data Processing Equipment in library operations, revealed that there was improvement in service. Eighteen of these reports reported saving in cost in personnel and others. The speed and accuracy was achieved by the machines. Better control of records, their up-to-datedness was the specialty. It also eliminated duplication of work.

It was concluded that it was more advantageous if used for (a) variety of purposes and (b) the cost of development is shared by several libraries.

Criteria for Automation

Well-known library scientist Chet Bahadur Airy considers that neither size nor history nor any other single aspect of a library is likely to claim for computerization. Number of titles cannot be the norm. So is the number of clientele. In short, there is not any hard and fast criterion for it. The introduction of microcomputers has rendered it possible even for smaller libraries to operate comfortably for the new transformation. However, there are some factors worth considering: financial strength, hardware requirements, and trained and skillful manpower.

Rationale for Library Automation

Why a library should automate its functions and services is a question that is rarely asked. More frequently asked are questions about what a library should automate and how. These are intimately related to the objectives of a library and that of the parent organization. It is important to recognize that we are concerned today with the role of library and the institutions of university and colleges in meeting the information need of multiple communities. A public or academic library, for example, serves a local population but also may be part of a network for serving the region, state or country. Similarly, states and countries have reciprocal arrangements. Individual corporate and private libraries often need to serve a broader constituency, such as employees and customers of an international company or need to exchange resources between libraries with similar mission law libraries and medical libraries. Information resources are increasingly being seen as valuable national resources and one that must be shared among the different seekers of such resources. The choices of balancing services to their multiple constituencies influence why and how libraries automate. The choices of balancing services to their multiple constituencies influence why and how libraries automate. The effectiveness of a

library in balancing its services to multiple constituencies is important for the library to get continued support from the organization it is expected to serve and form its other constituencies. The main reasons for libraries to automate their functions and services are as follows:

(i) Obtain increased operational efficiencies

(ii) Relieve professional staff from clerical work so that they are available for user services

(iii) Improve quality, speed and effectiveness of services

(iv) Provide access to remote users

(v) Improve access to resources on other networks and systems

(vi) Provide new services

(vii) Facilitate wide dissemination of information products and services

The above-mentioned reasons are mutually exclusive. Benefits of automation are known as spill over effect. Also, it is well known that a library beginning with one application and reaping its benefits soon begins to look for other areas where automation is possible and useful. In many developing countries, user pressure has been an important reason why libraries have sought to automate. Users, especially in academic and research institutions, have been responsible for initiatives that have led to library automation in these institutions.

Automation of a library involves investment in costly hardware and software and other resources, retraining of staff, and in some cases, recruitment of new staff.

There could be considerable dislocations in services during the changeover from a manual to an automated service. This is stressful both for library staff and users. The rationale for choosing automated solutions should, therefore, be clearly understood by the management, library staff at all levels and users. Ideally, there should be a shared understanding of the rationale, and the costs and benefits of library automation. Each library is uniquely positioned vis-à-vis parent organization and its user community, and, therefore, will view its reasons for automation differently from other libraries. It is useful, however, for each library to determine the benefits that automation may ultimately provide to all concerned and in the prioritization of its automation program. Such introspection and a shared understanding of goals can go a long way in creating a healthy environment in which automation can be planned and executed.

Check Your Progress

1. Who invented the integrated circuit?

2. Who introduced the term 'automation'?

3. Identify the areas of library automation according to Hayes and Becker.

4. What is the scope of library automation?

10.3 IMPACT OF INFORMATION TECHNOLOGY ON ACADEMIC LIBRARIES

Information is what is sought for by users to increase their knowledge base and add to what they already know. Information has undergone a revolution with the emergence of technologies, tools, techniques and equipment that are used to access and use this information. Today, we all hear the term information technology almost every day. Information technology is a combination of two terms- information and technology. Information refers to knowledge. Technology in the dictionary is defined as a 'systematic application of scientific and other organized knowledge, skills to practical tasks by the use of computers and communication.'

Information technology is broadly recognised as a generic term which denotes activities related with computer based processing, storage and transfer of information. Information technology does not refer to one technology but is a collective term for several technologies that are used to acquire, store, transmit, process and retrieve information.

Information these days in addition to books and paper is also available in the digital form. This means that information is stored in computers and databases and can be accessed by the information users as and when required. This digital information needs to be maintained in such a manner that it is made available to the users in an updated form. In other words, digital information needs to be monitored and controlled at all times so that the information stays updated and current. When it comes to digital information, the users of such information do not want to access obsolete information and since the digital platform is a dynamic one, the digital information always needs to be maintained in the right manner.

Information technology is also associated with the term 'ICT' or Information Communication Technology. ICT is concerned with the storage, retrieval, manipulation, transmission and maintenance of digital information. ICT deals with any product or method that can be used to manage, retrieve, store and manipulate data in digital form.

Information technology opens new doors and paths in maintaining, storing and retrieving information in academic libraries. Academic libraries we know are libraries that are established in academic institutions to meet the information needs of various types of users. Academic libraries in colleges and universities make use of computers, telecommunications as well as micro-electronics to ensure that information is stored and retrieved in the most optimal manner. Information technology is in fact being used in university libraries to:

- Develop new ways to store all information resources and materials in a compact and cheap manner. In essence, information technology is used in academic libraries to cut the cost of information maintenance, access and use.

- Develop new ways and mechanisms to manipulate, scan and research the information. This means that information technology entails finding new ways and means in which the information in academic libraries can be effectively used for research purposes. It is also essential to find new ways and methods in which information materials in the libraries must be manipulated so that the users always get the latest and updated information.

- Develop means and ways in which information from academic libraries can be easily transmitted and transferred to the users of the information. Information technology deals with finding new ways and methods in which information from the academic libraries can be retrieved by the users in a quick and easy manner.

The use of information technology and advances in the same are applied to academic libraries to improve the library services. In other words, information technology is used to make sure that the various library services are made available easily and conveniently to the information users. Academic library services make use of computers, hardware, software, telecommunications, internet, databases, expert systems as well as storage technologies to make sure that the information seekers and users are served in the best possible manner.

In academic libraries, information technology is very useful in creating databases for the libraries. With the use of information technology, academic libraries can create, manage and maintain their own databases that can be made use of by the information seekers and users through networks. These networks are also created with the help of information technology and ICT. The various services of an academic library are inter-related and inter-dependent and information technology ensures that all these are coordinated in the right manner to offer effective and efficient services to the users. Information technology encompasses all library services to improve them and make them more user-friendly.

The main information technologies that are considered relevant and have an impact on the library services include the following:

- Computer technology
- Communication technology
- Reprographic technology
- Printing technology

Computer technology can be used in various library services. In fact, computers are being extensively used in academic libraries for various operations and services. Computer technology has a great impact on the manner in which the libraries are managed. In an academic library, computer technology is made use of in:

- **Information resource building:** Computer technology impacts the manner in which information resources are acquired and managed. The use of such

technology ensures that the information resources are not duplicated in any manner. Computer technology is also used to manage the issue and return of books, record the purchase of information materials and also process orders in an easy and efficient manner. Computer technology is also made use of in an academic library to prepare budget of a library and maintain account statistics. All these library services can be completed in lesser time when computer technology is used. Recording of data also become more efficient when information technology is made use of. In addition, it becomes very easy to quickly process the regular activities of the academic library with computer technology.

- **Date entry:** Computer technology is used in an academic library for data entry. With information technology, each library maintains its own database of the information materials and resources. Computer technology is used to enter data related to every type of information resource that is maintained by an academic library. With the help of computer technology, it becomes easy to locate any information easily and in a quick manner thereby saving the time of the information seekers.

- **Classification and cataloguing:** Computer technology is used in academic libraries to classify information resources for their easy location, access and retrieval. Information technology is also used to develop a catalogue of the information resources. Computer technology in fact enables on-line checking, cataloguing as well as checking the classification of the information resources. By automating the classification and cataloguing process, computer technology enables the information to be used and managed in an easy and efficient manner.

- **Circulation control:** Computer technology is also used in automating the circulation control service. Computer technology is used to maintain a record of the issue, return and reservation of documents and information materials. Automation of the circulation process also ensures that the library staff stays updated with the lost and duplicated information materials.

- **Documentation services:** Computer technology in academic libraries is also used to make the documentation services more efficient and effective. Computer technology helps the library to maintain all documents in order and also retrieve the documents easily and in a quick manner. Computer technology is also used to index all information resources and documents for easy access and retrieval.

- **Information retrieval:** Computer technology is also used to create databases of all information resources so that these can be retrieved easily. Computer technology can be used to post search queries to find the required information and also print out the required information. Information retrieval is also made easy by computer technology as all information is arranged in alphabetical, chronological as well as in a subject-wise and orderly fashion.

Communication technology is made use of in academic library services to disseminate the information in the right manner. The use of communication technology ensures that information is retrieved and also made use of in an efficient and effective manner by the information seekers and users. Communication technology refers to a wide range of technologies that assist the users as well as the library staff to access, retrieve and transmit the relevant and required information. Communication technology involves the use of several types of tools and equipment that is made use of in an academic library to get the required information. Communication technology aids that are made use of in academic libraries for the information retrieval services include:

- Audio-visual technology
- Fax and telex
- Email services
- Online search
- Tele-conferencing
- Satellite technology
- Intranet and internet
- CDs

For instance, online search as a communication technology tool enables the users of the academic library to search for the required information from across various libraries and also the internet if the library offers internet services. The use of online search enables the users to find and use information from different resources and use the most relevant information. Similarly, CDs related to various subject matters and topics are available in academic libraries to assist the users in the learning process. With the help of CDs, the users are able to refer to and use the information in a very effective manner.

Reprographic technology has a great impact on the document delivery system in an academic library. Reprography is a reproduction process that helps to record data and information in a compact manner. Reprography enables the library to reproduce relevant information from several information resources and publications. With the increased number of books that are being published, it is not possible for an academic library to maintain a copy of each of these books and this is where reprography comes into play. Reprographic technology helps in the reproduction of important information from all types of books and publications to be recorded on micro-films and other such sources.

Reprographic technology that is made use of in library services includes:

- Photocopying
- Micro-copying
- Optical and digital processes of recording information

The use of reprographic technology helps to maintain and record information in an academic library in a compact manner and thereby reduces the cost of maintaining information materials.

Printing technology has a great impact on the information retrieval services of an academic library. Printing technology makes it possible for users to get the information on paper in the form of writing, printing as well as publishing. Printing technology also ensures that the right and relevant information is maintained and accessed by the users.

Information technology impacts every aspect of library management of an academic library. Technological advances that take place everyday impact all types of library services. In addition, continuous efforts are being made in the field of information technology to access, manipulate, retrieve and maintain information in academic libraries.

The introduction of information technology in academic libraries has led to reorganization of library services, change in patterns of work, demand for new skills and transformed access to information resources and materials. Academic libraries also make use of information technology to automate their core functions and implement the same in a better and a more efficient manner. Information technology also helps academic libraries to develop resource sharing networks, implement management information systems and also develop digital repositories to develop information resources that can be made use of by information seekers and users.

The use of information technology has also brought about unprecedented changes in library services and the manner in which they respond to the needs of the users. Information technology is made use of in user services, reference services, document delivery services as well as other library services to make them more effective and efficient.

Information technology has also led to the development of new tools for dissemination of information. Also with the use of information technology, academic libraries have been able to develop new and innovative web-services that make information access, use and retrieval by the information users easy and efficient. With library automation, it has become easy for the personnel of an academic library to perform operations like acquisition control, serials control, cataloguing and circulation control in an easy and a very efficient manner thereby enabling the personnel to not only save time but also work in a more productive manner.

Check Your Progress

5. What is information technology?

6. List the different types of reprographic technology that is made use of in a library.

10.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The integrated circuit was invented in 1961 by Robert Noyce of Intel and Jack Kirby of Texas Instruments, who were working independently.

2. The term 'automation' was first introduced by library scientist D. S. Hardar in 1936, who was then with the General Motor Company in the United States.

3. According to Hayes and Becker, the areas of library automation include:

   (a) The application of data processing equipment to do/or support the clerical/repetitive functions found in technical processing, circulation control and serials control;

   (b) The application of data processing equipment to the fields of information storage and retrieval, automatic indexing and abstracting, in reference work; and

   (c) The application of computers/data processing equipment for operation research and systems analysis.

4. The scope of library automation includes the application of computers and other modern technologies to:

   (a) Operations: Housekeeping operations, such as acquisition, cataloguing, circulation, serials control, and so on.

   (b) Library Services: CAS, SDI, Abstracting, Indexing, and so on.

   (c) Office Work: Usually termed as office automation.

   (d) Management Information System (MIS): MIS in which computers are used as a tool for scientific management of libraries/information centres.

5. Information technology is broadly recognised as a generic term which denotes activities related with computer based processing, storage and transfer of information.

6. Reprographic technology that is made use of in library services includes:

   - Photocopying
   - Micro-copying
   - Optical and digital processes of recording information

10.5 SUMMARY

- An automated library is one where computers are used to manage one or more functions of a library, such as acquisitions, serials control, cataloguing, circulation and public access catalogue.

- It is said that library automation development began in the 1930s when the punch card system was implemented in library for circulation and acquisitions.

- By the mid-60s, computers were being used for the production of machine readable catalogue records by the Library of Congress (LOC).

- OPAC (Online Public Access Catalogue) began to be used extensively in the 1980s. Libraries started to setup and purchase their own computer systems as well as connect with other established library networks.

- In India, computers were used in library work for the first time possibly by the Indian National Scientific Documentation Centre (INSDOC) when they computerized the author and subject indexes of 'Indian Science Abstract' in 1965.

- Today, we are living in the age of IT (Information Technology). The storage and retrieval of information has taken various forms and formats, such as online databases, microfilm/fiche, telecommunications facilities, video-text, and so on. Now a modern university library has to provide a package of many related services with the help of computer networking.

- According to Encyclopaedia of Library and Information Science, 'Automation is the technology concerned with the design and development of process and system that minimize the necessity of human intervention in operation.'

- Mechanization and automation of libraries offer an important solution to library staff shortage. It will lead to distinct reduction in the number of mistakes made in libraries.

- Automation of a library involves investment in costly hardware and software and other resources, retraining of staff, and in some cases, recruitment of new staff.

- Information technology opens new doors and paths in maintaining, storing and retrieving information in academic libraries.

- The main information technologies that are considered relevant and have an impact on the library services include the following:
  o Computer technology
  o Communication technology
  o Reprographic technology
  o Printing technology

- Reprographic technology has a great impact on the document delivery system in an academic library.

- The introduction of information technology in academic libraries has led to reorganization of library services, change in patterns of work, demand for new skills and transformed access to information resources and materials.

- With library automation, it has become easy for the personnel of an academic library to perform operations like acquisition control, serials control, cataloguing and circulation control in an easy and a very efficient manner thereby enabling the personnel to not only save time but also work in a more productive manner.

10.6 KEY WORDS

- **Data Entry:** It is the act of entering information into electronic formats by using word processing or data processing software hosted on a computer.
- **Cataloguing:** It is the process of creating metadata representing information resources, such as books, sound recordings, moving images, etc.
- **Management Information System:** It is an information system used for decision-making, and for the coordination, control, analysis, and visualization of information in an organization.
- **Information Retrieval:** It is the activity of obtaining information system resources relevant to an information need from a collection of information resources.

10.7 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Define automation.
2. Why should libraries automate their functions?
3. Where is computer technology made use of in academic libraries?
4. What impact has printing technology had on library services?

Long Answer Questions

1. Examine the impact of information technology on academic libraries.
2. Explain the use of information technology in university libraries.
3. Describe the history of library automation.
4. Discuss library automation in India.

10.8 FURTHER READINGS

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NOTES

UNIT 11 OVERVIEW OF ELECTRONIC LIBRARIES

Structure

11.0 Introduction
11.1 Objectives
11.2 Electronic Library
11.3 Digital Library
    11.3.1 Virtual Library
11.4 Answers to Check Your Progress Questions
11.5 Summary
11.6 Key Words
11.7 Self Assessment Questions and Exercises
11.8 Further Readings

11.0 INTRODUCTION

Owing to the advancement of information technology, most libraries across the world are changing their modes from print to digital. Library is a place which provides right kind of information to a user depending on his requirement and objective. In today's world when most libraries have shed their traditional garb and moving towards digitalization, the work of disseminating right information to the right person has become even more challenging. The new era digital library is also known as electronic library, in which the entire information is stored in digital form and it can be accessed by means of a computer. This unit will discuss electronic libraries, digital libraries and virtual libraries.

11.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss the management of electronic libraries
- Describe the features of digital libraries
- Explain the tasks undertaken by virtual libraries

11.2 ELECTRONIC LIBRARY

According to E.A. Fox, an electronic library may be defined as the 'New way of carrying out the functions of libraries encompassing new types of information resources, new approaches to classification and cataloguing, intensive use of

electronic systems and networks and dramatic shifts in intellectual, organizational and electronic practices.'

Characteristics of an E-Library

An electronic library requires digital equipment. As the name suggests it is not purely computerized but a balanced amalgamation of customary data and modern media collection. This means that digital libraries comprise both, paper as well as electronic material. Let us have a look at the characteristics of a typical electronic library:

1. An electronic library is mainly constituted of electronic documents, which can be used only for reference, the rights of this digital material cannot be shared with anyone.

2. An electronic library consists of digital objects, like text documents, audios, videos, images, and other multimedia constituents.

3. There is a possibility of accessing an electronic library remotely from any place other than the original site of the library.

4. An electronic library supports both, formal as well as informal learning processes.

5. An electronic library offers old, latest, rare and expensive material

Management of E-Library

The electronic library is a user-based library service which provides the users with a complete electronic connect to the information that they require. Management of an electronic library however is very different from managing a customary library. 'Factors such as distance from users, specific product/service delivery mechanisms, technology, and organization must be planned and managed differently, but the underling concepts of customer focused management are not profoundly changed' (Powell, 1994, p. 260). There are many difficulties faced by managers of electronic library services, but the three main problems faced by them are: recovery of cost, matters related to copyright, and training. In this modern electronic era, librarians must ensure a way to recover the constant costs spent on equipment being used in running the electronic library by way of increased funding or charging patrons. While copyright matters are taken care of, no copy written material can be made a part of electronic library. Library managers must make a constant effort to train the staff thoroughly which requires good amount of money and time. Nevertheless if they are able to bring about this change effectively, it can prove to be the most important thing to guarantee the success of an electronic library. These matters must be looked into at any cost, so managers of electronic libraries need to think again and bring about required changes in traditional management strategies. With the purpose of bringing about this change and handling these matters with other problems and efficaciously managing electronic libraries, managers must make use of latest tools and innovative technologies.

11.3 DIGITAL LIBRARY

Information and Communication Technology or ICT as we know it has changed the manner in which individuals and institutions function these days. This applies to academic libraries as well. Academic libraries are libraries that are established and maintained in large educational institutions to meet the information needs of the several users of the library. Academic libraries aid the teaching, learning and research processes in colleges and universities.

These libraries have been affected by the emergence of information technology and the Internet. In fact, academic libraries function using computer based networks and Internet these days to allow information seekers to access and use information from across the globe. This not only helps the users to expand their knowledge base but also allows them to make use of the most relevant and current information.

Information in digital form is the most important form of information in this day and age. Digital information must be maintained in such a manner that it meets the user needs and can be interpreted in a social context as well. This puts a lot of responsibility on the creators of digital information wherein they have to make sure that they always publish information that is accurate, current and relevant. In addition, it also needs to be ensured that the right digital resources and means are made available so that digital information can be used in the most optimal manner. Academic libraries need to make sure that the digital information they provide can be accessed and made use of in the right manner so that it can aid the teaching and learning processes. Digital information needs to be integrated in such a manner that these enable the teachers to teach in a better manner and the students to learn in the perfect manner. For this, it is essential that students and faculty be made aware of the various digital resources and how these can be used to access the most relevant digital information.

With the advent of digital information, there is also associated a term called digital library. A digital library in simple words can be explained as a library that maintains and provides access to digital resources and digital information. A digital library or a digital repository or a digital collection refers to an online database of digital objects. Digital objects in turn refer to digital content and information in various forms. Digital libraries store digital information and content and also provide means for organising, searching and retrieving such digital information in the right manner. Digital libraries have changed the manner in which academic libraries function and operate these days. In fact, digital libraries have changed the way in which information is stored, processed, accessed and delivered in academic libraries.

A digital library is a vast term that encompasses different aspects and may mean different things to different people. For instance, for children, a digital library may mean a collection of digital databases, documents and learning media and

resources that can be accessed via a computer network. On the other hand, for a businessman a digital library may mean a collection of information over a portal in the form of important business news, stocks and shares, information about budget etc. Putting in simple terms, we may say that a digital library refers to digitized information that is organised for information users from different backgrounds and with different information needs.

The Stanford Digital Library research team defined digital libraries 'as a coordinated collection of services, which are based on collections of materials, some of which may not be directly under the control of the organization providing a service in which they play a role.'

According to E.A. Fox, a digital library may be defined as a 'New way of carrying out the functions of libraries encompassing new types of information resources, new approaches to classification and cataloguing, intensive use of electronic systems and networks and dramatic shifts in intellectual, organizational and electronic practice.'

According to the Digital Library Federation, 'Digital Libraries are organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities.'

Digital libraries are mainly categorised into the following types:

- **Institutional repositories:** Academic institutions are always indulged in creating information repositories in a digital form. These institutions maintain books, papers, and thesis and research materials in a digitised form so that these can be accessed and used by the students as well as the faculty members of the institution. These institutional repositories function on an open –access system wherein the information resources can be easily accessed, retrieved and used.

- **Digital archives:** These are online archives that contain primary sources of information or information from primary information sources. Digital archives are individual collections of information and are not categorised on the basis of the information they contain. In addition, digital archives contain content that can be easily reproduced and needs to be reproduced to meet the information needs of the various types of users.

Digital libraries can be used to easily and rapidly access information required by an information user. Digital libraries also help users find the most relevant information and use it. The following are features of digital libraries:

- **No physical boundary:** Digital libraries have no physical boundaries in the sense these can be accessed from anywhere and anytime. A person who accesses information from a digital library does not need to visit the physical library to get the required information.

- **Availability:** Digital libraries are available round the clock. Since the information is stored in a digitised form in digital libraries which is available via networks and Internet, one can access the library for information needs all round the clock.

- **Multiple accesses:** Digital libraries allow multiple users to access the same information. In other words, several users from across the globe can access the same information at any given time without hindering the access and retrieval process.

- **Easy information retrieval:** From a digital library, information can be retrieved in an easy and quick manner. One can simply type in the search term or word in the interface and get the required information. A digital library returns several results for a typed word or phrase and the users can make use of the most relevant information.

- **More storage space:** Physical libraries always face space constraint wherein they are unable to store a large amount of information in the form of books, periodicals and journals. When it comes to digital libraries, the space constraint is not there. Digital libraries are able to store large amount of information because the information is stored in a digitised form. A large number of media storage technologies are made use of to store large amounts of digital information in these libraries.

- **Preservation and conservation of information:** Digital libraries are able to preserve and conserve information which would have otherwise degraded from repeated use. Digital libraries are in fact best storage solutions when it comes to preserving old information and information that is of much use without compromising the quality of information.

Over the last few years, digital libraries have witnessed a manifold increase in terms of collection of information as well as the access of information. Digital libraries, however, also have a few limitations including the following:

- Users always need to authenticate themselves before accessing the digital information resources from a digital library.

- At times, there are instances when the network is not working and access to the digital library becomes impossible. At times, there is also a problem in making the software work as per the needs and requirements of the users making it difficult to not only access but also use digital information.

- Information users need to learn how to use the user-interface for accessing and retrieving information from the digital library. This is a problem because not all users are computer and network friendly and may take a lot of time before understanding the entire process of using a digital library.

11.3.1 Virtual Library

The development of information technology has brought about several changes in the way academic libraries operate and meet the information needs of the various

users. With information explosion, the information needs of users are also changing. Today, for instance, students understand concepts better when they are aided with audio-visual content. Keeping in mind the changing and dynamic user needs, libraries have changed the way they are organised and operate. Information technology has led to the development of what can be called virtual libraries.

Virtual libraries are more like digital libraries wherein information is stored in a digital form. Virtual library in fact allows any person who has access to a computer and is connected with a library network to access information from any library. With a virtual library, a person does not get to access information only over a specific library network but can also access information over the Internet and therefore a worldwide collection of information. In other words, a virtual library opens gates to millions and trillions of information resources that a person may otherwise be unable to access because of physical constraints.

Kaliammal defines a virtual library as, 'an information system targeted towards a specific community, where content from different sources is collected and managed, content is structured and enriched with metadata, and a set of services is offered that makes the content available to a user community via a communication network, typically the Internet.'

Virtual libraries contain information in several forms and not in traditional forms of textbooks. In fact, virtual libraries store information in the form of written material, videos, images, 3D objects and multimedia content. With virtual libraries, one can get access to global content at any given time. Virtual libraries make it possible for users to access any information from anywhere without having to be physically present in the library. This adds to the convenience of the users who are able to access relevant and required information easily and quickly.

A virtual library acts as a mediator between information users and the global content. In other words, virtual libraries allow users to access and retrieve any information about anything and at any time. To do this, virtual libraries undertake the following tasks:

- **Content pre-selection:** A virtual library undertakes the task of pre-selecting and organising the content that would be useful for its various users. The aim of this task is to find high quality content that is relevant for the users.

- **Content structuring:** Virtual libraries make sure that they structure the content in a manner that makes it easily recognisable and accessible. The content is structured according to the pre-dominant domains of user understanding and information needs. This means that virtual libraries always maintain information that is current, useful and relevant for the information seekers.

- **Content enrichment:** Virtual libraries undertake the task of enriching the content to make sure that all information is useful for the users. All content present on the virtual library is enriched with descriptive and value-added

meta-data that ensures that users find what they are looking for in an easy and quick manner.

- **Library services:** To ensure that the information on virtual library can be accessed, retrieved and used by the information seekers, virtual libraries also offer library services. These library services are provided to make sure that the information seekers and users are able to locate and use the most relevant materials. The users with the help of library services are able to recognise the most important and useful information.

The following are the features of a virtual library:

- Virtual library provides speedy access to a wide range of global information materials.

- Virtual library makes it easy to catalogue not only book but also non-book materials for easy access.

- Virtual libraries help users save time in locating and accessing information by providing library services.

- The virtual libraries aim to improve and enhance the access process and not the information. In other words, the main aim of virtual libraries is to help users access the most relevant information easily.

- Virtual libraries require a lot of developed infrastructure to function in a proper manner. In other words, a lack of the required infrastructure can render such libraries dis-functional.

Check Your Progress

1. What is an electronic library?
2. What are digital archives?
3. Define virtual library.

11.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. An electronic library may be defined as the 'New way of carrying out the functions of libraries encompassing new types of information resources, new approaches to classification and cataloguing, intensive use of electronic systems and networks and dramatic shifts in intellectual, organizational and electronic practices.'

2. Digital archives are online archives that contain primary sources of information or information from primary information sources.

3. Kaliammal defines a virtual library as, 'an information system targeted towards a specific community, where content from different sources is

collected and managed, content is structured and enriched with metadata, and a set of services is offered that makes the content available to a user community via a communication network, typically the Internet.'

11.5 SUMMARY

- An electronic library requires digital equipment. As the name suggests it is not purely computerized but a balanced amalgamation of customary data and modern media collection.

- An electronic library is mainly constituted of electronic documents, which can be used only for reference, the rights of this digital material cannot be shared with anyone.

- The electronic library is a user-based library service which provides the users with a complete electronic connect to the information that they require.

- Information in digital form is the most important form of information in this day and age. Digital information must be maintained in such a manner that it meets the user needs and can be interpreted in a social context as well.

- The Stanford Digital Library research team defined digital libraries 'as a coordinated collection of services, which are based on collections of materials, some of which may not be directly under the control of the organization providing a service in which they play a role.'

- Digital libraries are mainly categorised into Institutional repositories or digital archives.

- Over the last few years, digital libraries have witnessed a manifold increase in terms of collection of information as well as the access of information.

- The development of information technology has brought about several changes in the way academic libraries operate and meet the information needs of the various users.

- Virtual libraries contain information in several forms and not in traditional forms of textbooks. In fact, virtual libraries store information in the form of written material, videos, images, 3D objects and multimedia content.

- Virtual libraries undertake the task of enriching the content to make sure that all information is useful for the users.

11.6 KEY WORDS

- **Portal:** It refers to a website or web page providing access or links to other sites.

- **Thesis:** It means a long essay or dissertation involving personal research, written by a candidate for a university degree.

- **Meta Data:** It refers to a set of data that describes and gives information about other data.

11.7 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Question

1. What are the limitations of digital libraries?
2. Discuss the tasks undertaken by virtual libraries.

Long Answer Questions

1. Discuss the management of e-libraries.
2. Describe the features of digital libraries.

11.8 FURTHER READINGS

Singh, Gurdev. 2015. *Academic Library System and Services*. New Delhi: Ess Ess Publications.

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UNIT 12 LIBRARY INFRASTRUCTURE

Structure

12.0 INTRODUCTION

In the previous unit, you learnt about digital, virtual and electronic libraries. In this unit, the discussion will turn towards library infrastructure. An academic library must cater to the information needs of the students, researchers and scientists with its well managed information resources housed in a library building. A library building must be designed in such a way that the space within the library is utilized optimally without compromising on its spacious appeal.

12.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss the principles of a good library building

- Explain the basic design principles that govern the design of the library furniture

12.2 LIBRARY BUILDING

A good library building is anticipated to offer flexible space for learning and customary rooms for reading which inspire erudition and learning. In the modern era, there is a complete change in the information house as there is a movement from print to electronic resources. A traditional library is being replaced by the concept of a virtual library. The new system of learning is virtual, disseminated, problem solving, pupil-oriented, hence there is a need to reshape library services in order to have the desired effect. Seeing these developmental changes many questions occur to the mind which need to be pondered upon by librarians and information patrons to answer. For instance: Is there still a need of physical libraries

in the present age where information can be accessed electronically and is available at a click? What lies hidden in this revolutionary change with regard to the creation and design of the library space? The model change in information resources from print to electronic and a shift from manual services to electronics, demands a serious scrutiny of the notions, ideologies and structures of library space and building infrastructure.

Doctrines of Library Space Design and Management

Space is an extremely imperative conception in designing and planning libraries as a place. The three basic elements that need to be considered and connected in provision and maintenance of library are role, usability and appeal. So, in order to make sure that any building works well, these elements must be incorporated in different degrees. To make any space achieve its aim, whether in a library, office or home, it is essential to comprehend how people feel about that space and how they carry on with their work in that space. This psychological data helps in providing or rearranging space in order to make that space work better for people and people work better within that space. Consequently, there is need of a proper body of people to ascertain the physical requirements of a good library. Cohen and Cohen (1979) wrote that the interior design aspect such as furniture and equipment layouts, people and material traffic patterns, workflow, lighting, acoustics, and even colour affect how users and staff work in the library. Inner design of a library building and its management regulate, significantly, the degree of approachability of materials and attentiveness of users of the library. A noiseless and adequately lit space makes it easy for people to muse in the library in comparison to a continuously noisy and poorly lit place.

The following elements frame the mandatory prerequisites of a good library space:

- Enough room for library material and further expansion or accumulation of collections.
- The library must be comfortable or socially usable for patrons as well as members of staff.
- Patrons of the library must find it inviting and appealing and there must be enough space for the staff to move about and do their job.
- The library should have an aesthetic appeal.

A library housed in an ugly and ill kept building will only repel people from entering. The librarian and other library staff must organize the library in an appealing fashion so that it attracts maximum patronage.

Principles of a Good Library Building

A modern day library must function on these principles: openness, multifunctional, flexibility and artistry. Sinclair (2007) gave out five guiding principles to a successful library; open, free, comfortable, inspiring and practical.

1. Openness

A library must have the capability to provide free, appropriate and quick services to its patrons. So, a library building's design must take into consideration the efficacy of space and place. The modern librarianship, in contrast to the old closed access has shifted to open access. Reading areas in the library should be provided easily seen and accessible having open piles with large space.

2. Multifunctional

A good library building must have the capability to provide multiple functions in association with recent improvements in formats of documents, reading techniques, document delivery methods and the varied library activities. It must offer assortment of informational materials for instance printed books, audio-visual resources, electronic alternatives and internet services. There must be enough space to house these materials and also provide an excellent study, teaching, learning and research environment for several groups of library patrons.

3. Flexibility

The building of a library must be designed in such a manner that it is able to accommodate any future changes in the structure and services of the library. The institution of modern information technology has initiated restructuring of library facilities and organization into the traditional library form. In order to fulfil this present-day advance in the library information systems and reader services, the newly constructed library buildings adopt the principles of flexibility.

4. Artistry

Aesthetic appeal is a significant feature of a library building. Nothing much can be done to the poorly constructed libraries but during the construction of a new library building attention should be paid to the beauty of the place as much as it is given to the representation of knowledge and culture. There should be a balanced combination of such features as outer appearance, inner layout, creative design and natural surroundings.

12.3 LIBRARY FURNITURE AND EQUIPMENT

An academic library is set up to meet the information needs of people who study and teach at academic institutions. In simple words, teachers and students of an academic institution make use of an academic library to search for information from several information materials maintained in the library. An academic library from a larger perspective aids and supports an academic institution in identifying and achieving its objectives. The library allows students and faculty to find relevant information to enhance not only their knowledge base but also to make teaching and learning more efficient and effective.

An academic library is usually set up at a location in the institution where it can be easily reached and accessed. Educational institutions that have a single academic library have their library in a central location so that students and faculty can easily visit the library. For institutions that have several libraries, it becomes imperative to make sure that every library is situated in close proximity to the building or area wherein the students and faculty visit often. It is important that academic library be located at a central place so that it can be frequented by the users. If a library is located in a remote location of the campus of the educational institution, the users refrain from using it and the library becomes more of a store house.

Since an academic library is established to support the learning, teaching and research process, it is important to ensure that the physical environment of the library is conducive to the achievement of these goals. The library must be set up in a manner wherein the users find it easy to search for the information and make use of it. The library must be equipped with all essential features, facilities, tools and equipment to make it possible for users to use the library for the purpose for which it has been established.

The users of an academic library tend to spend a lot of time in the library searching for the information they require. In most cases, the users first locate the information resources that may contain the information they require. Once this is done, the users read and sift through the information materials to find the most relevant information. In other words, locating and accessing relevant and required information is a time-consuming process. To make search and access operations easy and efficient for the users, it is essential that an academic library provide all necessary facilities and amenities to the users. It also becomes necessary for an academic library to have required tools, furniture and equipment in place so that the users can find information in an effective manner.

The academic library must be planned and set-up to make sure that it can accommodate all types of furniture and equipment that are essentially required in the library for its use. The following principles must be kept in mind when a library has to be set-up in an education institution:

- The library building must be designed on a functional basis, i.e., the planners must consider the functions the library has to perform before it can be set-up.

- The physical design and set-up of the library must also be based on the functions of the library.

- It is essential to design and plan the interior details of the academic library before the exterior details can be finalised and looked into.

- The library design and set-up must be such that it offers economy of administration and operations. In other words, the library must be so set-up that it makes the administration and operations efficient and effective.

- The study areas that are developed in the library must be in close proximity to the book shelves and book storage areas so that the users can locate the required information materials easily.

- The library must be set-up in a simple manner and not with many turns and invisible areas. In other words, the users must be able to access and see every area of the library.

- The set-up of the library must be so planned that it leaves place for anticipated and future developments. Academic libraries may need to expand over time and therefore it must be initially set up to accommodate any expansions that may take place later.

An academic library be equipped with essential furniture and equipment that help the information users to locate and use the important and relevant information in a quick and easy manner. The library furniture and equipment is central to the set-up of the library and must therefore be procured by keeping in mind the above principles.

Some important furniture items that are integral to an academic library and its functioning include:

- Shelves

- Desks

- Chairs

- Work-tables

- User tables

- File cabinets

Library shelves are usually made of wood or metal or a combination of both. These shelves occupy a lot of space in the academic library as these are the main furniture items wherein all books and information materials are placed. The shelves must be of good quality and highly durable. When shelves are procured for libraries, it must be ensured that these are neither too high nor too low so that all types of users can access these for locating information sources. Shelves may be single-faced or double-faced, the latter allowing more books to be stacked in one shelf.

The cabinets in a library are required for various purposes. Cabinets may be required to store catalogues and cards. These cabinets must also have a provision for drawers so that it is easy to store and maintain different catalogues and cards.

Chairs, work-tables, user-tables and desks are required in a library to allow the users as well as the library staff to work in an efficient manner. These furniture items must be comfortable and made of good quality materials. It is also essential for these items to be durable so that they do need to be replaced often because of regular use, wear and tear. The chairs and tables must also be placed in the library

so as to optimally make use of the library space and allow the users to easily and effectively work in the library.

The library furniture must be chosen by taking into consideration the following:

- **Vision and goals of the library space:** It is important to take into consideration the functions that the library would perform and the goals it aims to achieve for information users when choosing library furniture. It is important to take into consideration the activities that would be performed in the library as well as the user experience before opting for library furniture.

- **Function:** The function of the library must be considered when choosing furniture. A library meets the information needs of various types of users and so the library furniture must be chosen by taking into consideration all types of users. It is also essential to know how flexibly the library performs its functions. In other words, it is necessary to know whether or not the library allows the users to move furniture as per their needs and requirements. If an academic library allows users to do so, the type of furniture required may be different than what may be required when a library needs to be equipped with immovable furniture.

- **Ergonomics:** The library furniture must be chosen by taking ergonomics into consideration. In other words, when choosing library furniture, the type and number of users must be considered as well as their comfort level must be considered. The library furniture must be chosen to ensure that all users feel comfortable using the furniture in the library. In essence, the library furniture must be chosen to optimise the library use by the users.

- **Durability:** Library furniture undergoes a lot of wear and tear because it is used on a regular basis. It is therefore essential that library furniture be durable and made of good quality materials. The furniture chosen for a library must be water-resistant and must also be durable so that it does not need to be replaced often.

There are some basic design principles that govern the design of the library furniture. These principles include:

- **Function:** Function refers to comfort, convenience, efficiency, serviceability and operation. Library furniture must be such that it offers all of these. The library furniture must be comfortable and convenient to use so that it enables the users to maximise their efficiency. The furniture must add to the productivity and serviceability of an academic library.

- **Construction:** It is important for library furniture to be durable and resistant to wear and tear. The furniture surface must be able to bear abrasion and impact so that it does not need to be replaced and changed often. The joints of the furniture must not loosen and all movable parts must be sturdy. The construction of the furniture must be such that it minimizes any type of failure in terms of functioning as well as use.

- **Materials:** When it comes to library furniture, there is a wide choice as far as materials are concerned. Today, library furniture is available in plastic, wooden, and synthetic materials making it tough to choose the right material for library furniture. Materials must be so selected that the furniture turns out to be durable, flexible, strong, as well as adaptable to different library environments.

- **Finish:** The finish of the library furniture must be such that it gives a rich and elegant look to the library. The surfaces of the furniture must be finished and coated in a manner wherein the natural beauty of the furniture is enhanced in every possible manner.

- **Scale:** The library furniture must be scaled. This means the size of the furniture must be in proportion to the area where it has to be used. Also the furniture must be so scaled that every user finds it easy and comfortable to make use of the furniture items.

An academic library also needs to have equipment of different types. Stationery equipment, equipment that facilitates use of information as well as computer equipment must also be provided in an academic library. The provision of all such equipment in a library ensures that the users get to access and use the important information in a very effective and optimal manner. Photocopy machines, networks, printers etc. must also be placed in areas of the library where all users can easily access them. The presence of this equipment enables the users to access and retrieve relevant information quickly.

The following equipment must be present in an academic library so that the users can work and use information conveniently:

- Typewriter
- Photocopier
- Catalogue cards
- Telephone
- Pamphlet files
- Magazine boxes made of cardboard, wood or plastic
- Loose-leaf binders
- Transparent folders
- Record cards for periodicals
- Rubber stamps
- Paper punch
- Stapler
- Paper, pens, envelopes, scissors
- Computers

- Routers

- Network cables

All this equipment must be maintained in an orderly fashion in an academic

library. It is also essential that all equipment be readily available for use. The equipment must always be well-maintained and in working condition so that the users do not face problems in accessing and using information materials.

Check Your Progress

1. What is an extremely imperative conception in designing and planning libraries as a place?

2. What are the principles on which a modern day library functions?

3. What is essential to make search and access operations easy and efficient for the users in a library?

4. What is needed to allow the library staff to work in an efficient manner?

12.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Space is an extremely imperative conception in designing and planning libraries as a place.

2. A modern day library must function on these principles: openness, multifunctional, flexibility and artistry.

3. To make search and access operations easy and efficient for the users, it is essential that an academic library provide all necessary facilities and amenities to the users.

4. Chairs, work-tables, user-tables and desks are required in a library to allow the users as well as the library staff to work in an efficient manner.

12.5 SUMMARY

- A good library building is anticipated to offer flexible space for learning and customary rooms for reading which inspire erudition and learning.

- The new system of learning is virtual, disseminated, problem solving, pupil-oriented, hence there is a need to reshape library services in order to have the desired effect.

- Space is an extremely imperative conception in designing and planning libraries as a place. The three basic elements that need to be considered and connected in provision and maintenance of library are role, usability and appeal.

- To make any space achieve its aim, whether in a library, office or home, it is essential to comprehend how people feel about that space and how they carry on with their work in that space.

- Sinclair (2007) gave out five guiding principles to a successful library; open, free, comfortable, inspiring and practical.

- A good library building must have the capability to provide multiple functions in association with recent improvements in formats of documents, reading techniques, document delivery methods and the varied library activities.

- Aesthetic appeal is a significant feature of a library building. Nothing much can be done to the poorly constructed libraries but during the construction of a new library building attention should be paid to the beauty of the place as much as it is given to the representation of knowledge and culture.

- An academic library is usually set up at a location in the institution where it can be easily reached and accessed.

- Locating and accessing relevant and required information is a time-consuming process. To make search and access operations easy and efficient for the users, it is essential that an academic library provide all necessary facilities and amenities to the users.

- Some important furniture items that are integral to an academic library and its functioning include:
  - Shelves
  - Desks
  - Chairs
  - Work-tables
  - User tables
  - File cabinets

- There are some basic design principles that govern the design of the library furniture. These include finish, scale, construction, materials and function.

- An academic library also needs to have equipment of different types. Stationery equipment, equipment that facilitates use of information as well as computer equipment must also be provided in an academic library.

12.6 KEY WORDS

- **Ergonomics:** It refers to the study of people's efficiency in their working environment.

- **Routers:** It is a common type of gateway, positioned where two or more networks meet, including at each point of presence on the internet.

- **Durability:** It refers to the ability to withstand wear, pressure, or damage.

12.7 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What elements frame the mandatory prerequisites of a good library space?

2. What principles should be kept in mind when a library has to be set-up in an education institution?

3. List the various important furniture items that are integral to an academic library.

Long Answer Questions

1. Describe the principles of a good library building.

2. Examine what should be taken into consideration while choosing library furniture.

3. Explain the basic design principles that govern the design of the library furniture.

12.8 FURTHER READINGS

Singh, Gurdev. 2015. *Academic Library System and Services*. New Delhi: Ess Ess Publications.

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BLOCK - V
PRESERVATION AND CONSERVATION

UNIT 13 LIBRARY MATERIALS PRESERVATION

Structure

13.0 INTRODUCTION

In the previous unit, you learnt about library building, furniture and equipment. In this unit, the discussion will turn towards the preservation of library materials. The preservation policies of a library refers to procedures taken to prevent, stop, or neutralize deterioration of library materials through the administration of storage techniques and housing of materials, environment, security/prevention of theft, handling practices, as well as through user and staff education. This unit will discuss the various methods of preservation and conservation of materials in the library.

13.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss the protective methods of conserving library materials

- Explain the storage of library materials

- Describe stock verification and rectification

13.2 PRESERVATION AND CONSERVATION OF LIBRARY MATERIALS: METHODS AND TECHNIQUES

In a library, an active preservation program encourages respect for the library and its collections, decreases the loss of materials through neglect or carelessness, and

conserves resources through the application of preventive and corrective measures. Preservation is a vital component in any activity involving introduction of library materials into collections (selection, acquisition, and cataloguing) and handling by library staff and users. Much of this depends on staff understanding and observance of good preservation practices. Active participation and leadership in the preservation program is the responsibility of all staff. The responsibility of preserving and conversing materials in a library is in the hands of a library archivist.

In a library, documents are procured after careful evaluation and analysis to make sure that they are useful to the users and that they are in line with the ideas and objectives of the parent organization. Considering the effort that goes into procurement of documents, proper care should be taken so that they can be used to the maximum possible. Ranganathan's Second and Third laws of Library Services talks about caring for the collections, 'Every Reader his/her book' and 'Every Book its reader'.

Storage and Care

We should recognize that non-book materials and rare collections cannot be stored in the same way as books; they need distinct types of shelves. For rare collections, shelves with glass doors are needed for closed/restricted access. For example, palm leaf manuscripts cannot be kept in a vertical arrangement and need to be spread over the shelves. In addition, having air-conditioning for these locations will help ensure proper care and aid in conservation. On the other hand, sound recordings, such as gramophone records need to be kept in a vertical position; so, box type wooden shelves would be the best. Special holders would be needed for maps and microfilms and container boxes for films. To be able to take proper care, it is not only a case of using appropriate types of shelving for different materials, but their location should also be well specified.

The library is responsible for the care of all materials that are part of its collections. Proper care is essential to help increase the life of the materials and also to guard against the loss of these materials. When we say lost, it includes reasons, such as: climatic variations; direct light; dust and dirt; various types of insects; and human beings (e.g., readers).

Climactic conditions and sudden changes in them can play a big role in the destruction of library materials. Temperature and humidity, incessant rains, continuous dry spell and other such variations of nature are some of the factors that a library needs to pay attention to. With the advancement of modern science, there are now techniques to prevent/rectify the effects of nature. Avoid situations that can be detrimental to the life of the material, such as exposing a book directly in sunlight can reduce the softness of paper and damage the binding. Audio-visual materials can also be adversely affected by sunlight. It will be advisable to take adequate precautions so that no library material is exposed to direct sunlight.

Moisture and dampness are conditions that are harmful to the physical condition of library materials as well. Insects thrive in surroundings that are moist and damp. Moist and damp conditions mostly occur during rains and as a safeguard ensure that the library premises is properly ventilated or even air-conditioned. Frequent dusting and cleaning of the materials will help reduce the harmfully effects of dust and dirt. Periodically, a library may require to resort to vacuum cleaning.

Sound preventive measures should be rigorously followed to protect library materials against insects and parasites, such as book worms, silver fish and other insects, fungus, and so on, Special preservation treatment is required for special collections, rare books, manuscripts and fragile materials, in addition to being kept apart from the regular collections. For example, the staff of the Scientific Research Laboratory, Lennin State Library, has been using pentachlorophenol sodium salt successfully as a fungicide, and for disinfecting the air in stack rooms, they have been using bactericidal equipment. For insect control they suggest: 'the most effective, safest and most convenient insecticide for libraries is DDT, which is used in powder, suspension or solution form depending on the insect population of the stack room.'

Damage and loss to books and other reading materials in the library can also be caused by human beings. Users often misplace materials, mutilate and even steal library materials. Libraries need to take adequate precautions to prevent such offences from happening. A. K. Sharma states: 'generally it is observed that the readers, who are not capable of copying the graphs, art plates and so on,, are tempted to take them away even against their conscience. Therefore, if there is a provision of reprographic service, this wrongful act may be avoided. Some more precautions are also suggested as: to be alert and check all visitors coming to the library, to keep an eye on doubtful readers, no personal belongings should be allowed inside the library, pocket size and other such smaller books should be kept under lock and key, the windows and doors of the library should be made theft proof as well as rat proof, i.e., a net wire of steel meshes should protect books from being thrown out of the library…'

Sharma also mentions 'only one door should be kept open for exit and another for entrance'. However, this is not advisable as there should always be only one entry and exit point and that too at the main entrance.

In a library, books are very frequently used and the wear and tear is considerably high. Due to this, the books will need immediate attention as minor repairs, mending and binding may be required to preserve the collection. Smaller libraries take the support of external parties to take care of the binding requirements. But, larger libraries normally set up their own binding section with well-equipped and trained staff to take care of the binding requirements. Regular and periodic inspection of the library stack areas is mandatory. This should be conducted by the librarian and circulation staff to locate documents that need repair, mending and binding.

Shelf Rectification

Books getting misplaced are a major issue in libraries, particularly in open access libraries. Some users attempt to hide books deliberately so that they are not taken up by other users. Often, library staffs are careless and stack books on the wrong shelf. It is important to keep books in their rightful designated places. Then only will they be easily located and be of use to many users.

There are many terms used for referring to the activity of examining books and correctly placing them on their designated shelves. Some of the terms are: 'Shelf tidying', 'Shelf checking' and the popular term used in America is 'Shelf reading' and 'Revising shelves' is called 'Reading shelves'. For the process of restoring order among the books, Ranganathan advocates the use of the term 'Shelf rectification'.

Shelf rectification is the activity of thoroughly reading each shelf and putting back in proper order all the books that have been misplaced.

Here are some advantages of shelf rectification:

- Library shelves will emerge as neat and in order and the books will be place in an organized way.

- The placement of the shelves will facilitate the users when they search for books helping them to save time and locate the required book effortlessly.

- Library staff will find it easy to notice damaged books and books that need to be immediately sent for binding, repair, replacement or weeding out,.

- Library staff will find it easy to recognize gaps in the collection, if any.

Stock Verification

A library's stock of material needs to be verified from time to time. Documents on shelves and also those issued on loan need to be verified. This process is called 'stock verification' and sometimes also known as 'Stock taking'. Stock taking is defined in Harrod's Librarians' Glossary as 'the process of taking stock by checking records of books possessed with copies on the shelves or records of books on loan'.

Krishan Kumar says 'strictly speaking it is meant to ascertain that all the books acquired by the library can be accounted for. Thus in a narrow sense it means physical check-up of the documents on record. However, from professional point of view, stock verification should not be equated with physical verification of stock. It is concerned with maintenance and shelf rectification of stock'.

Basically, there are two reasons for modifying the meaning of stock verification. One is that over a period of time the numbers of documents keep increasing, resulting in an enormous collection and it is not practical to do a document by document verification. Next, the attitude of the library shifted focus to the effective use of documents instead of physically counting the documents.

Mittal observes: 'though, theoretically it may not be very essential to resort to regular stock-taking…it is both essential and desirable to have some kind of checking so that inherent defects in the administrative policies may be devised to eradicate these maladies'.

Some of the advantages of stock verification are listed as:

Stock Verification

- Reveals lost books
- Enables replacement of important books that are lost
- Helps in undertaking stock rectification
- Helps the library authorities in taking decisions on introduction of open access
- Impresses the authorities on the inevitability of loss of books
- Helps the library authorities in taking necessary precautions if the loss is very high and unimaginable
- Provides opportunity to survey the stock and be aware of the library collection
- Helps in finding out the imbalances and gaps in the library collection and thereby helps in book selection
- Helps in updating library catalogues and other records
- Enables periodic shuffling and dusting of books on the shelves
- Identifies old editions and books not in demand or use to be weeded out
- Identifies books that need repair and replacement

Stock verification has several disadvantages also:

- Routine work is impacted and users' services will get dislocated.
- During stock verification many libraries completely close down, while some may curtail their services. From the user view-point, closing and curtailing services is not desirable.
- The cost of stock verification, sometimes, is higher than the cost of the lost and/or damaged material.
- Some libraries follow the practice of recalling the borrowed books during stock verification, to complete the physical verification. This causes issues for the user.

There are quite a few processes that can be adopted. On the other hand, the Government of India has laid down some new rules for Stock Verification.

Prior to 1984, books, journals, and so on, were treated as 'store items' by the Government of India. This made it necessary to go through the stock verification process. However, according to an order by the Government of India, libraries did not need to declare books, journals, and so on, as store items. Now, they can set up alternate methods for stock verification. The Government order is reproduced below:

NO.F. 23(7)-E.II(A)/83 GOVERNMENT OF INDIA (DEPARTMENT OF EXPENDITURE)

New Delhi, Dated the 7.2.1984 18 Magh, 1905 (Saka)

OFFICE MEMORANDUM

Subject: Amendment of Rules 99 and 116 of the General Financial Rules, 1963 (Third Edition) – Exclusion of books, publications and periodicals, and so on, from the definition of 'Stores'.

Attention of all the Ministries/Departments of the Government of India is invited to Rule 99 and 116 contained in Chapter 8 dealing with the 'Stores' in the General Financial Rule, 1963. The President has been pleased to decide that hereafter the books, publications, periodicals and so on, of a Library will not be treated as an item of 'Stores' as defined in the 'Note' below rule 99 of the General financial Rules, 1963. Accordingly the provisions of the said 'Note' and the Government of India's decision (1) below rule 116 of the General Financial Rules, enclosed. This issues with the approval of the Comptroller and Auditor General of India and the Department of Supply.

Hindi version of this O.M. is enclosed.

Sd/- (K.L. MEHTA) UNDER SECRETARY TO THE GOVERNMENT OF INDIA TELE: 373159

To All the Ministries/Departments of the Govt. of India, and so on,

NO. F.23(7)-E.II(A)/83

Copy forwarded to the Comptroller and Auditor General of India (with spare copies) and the Union Public Service Commission and as per standard endorsement.

Sd/- (K.L. MEHTA) UNDER SECRETARY TO THE GOVERNMENT OF INDIA TELE: 373159

AMENDMENT TO G.F.R. (GENERAL FINANCIAL RULES) 1963 (3rd edu.)

PAGE: 38 CHAPTER 8 RULE: 99

The following words shall be added to the last sentence in the note below rule 99: 'But excluding books, publications, periodicals and so on, in the library'.

Ministry of Finance (Deptt.Of Exp.) O.M. No.F. 23(7)-E.II(A)/83 dated 7.2.1984 and Deptt. Of Supply U.O.No.I.O. No. PIII-3(6)/83 dated 26.4.83 and C.A.T.'s U.O. No. 1984-TA.II/21-83 dated 23.12.83.

PAGE: 40-41 CHAPTER 8 RULE: 16

For the existing Government of India's decision (1) below rule 116, the following shall be substituted:

'Government of India's decision (1):- The position of library books, and so on, is different from that of other stores. Accordingly, the following procedures shall be observed for purchase, write off, disposal of mutilated/damaged books and physical verification of books in the libraries attached to the various Departments/offices:-

i) Librarian not below the rank of Deputy Secretary to the Govt. of India subject to the powers delegated under Delegation of Financial Powers Rules, 1978 may purchase books, and so on, from the reputed and standard book-sellers on the prevalent terms and conditions, tenders need not be called for this purpose. ii) Loss of three volumes per one thousand volumes of issued/consulted in a year

may be taken as reasonable provided such loss cannot be attributed to dishonesty or negligence on the part of Librarian. Loss of a book of the value exceeding Rs. 200/- (Rupees two hundred) and the books of special nature and rarity shall invariably be investigated and consequential action taken. All such losses will however be written off only by competent authority. iii) Librarian who is of the rank not below Deputy Secretary to the Govt. of India or Head of the Department may write off the loss of volumes mentioned in the preceding paragraph provided the total value of all such books, and so on, does not exceed the monetary limit prescribed in the Delegation of Financial Powers Rules, 1978 for Head of a Department in respect of deficiencies and depreciations motor cycle included in the stock and other accounts. In the event of the total value exceeding the monetary 1 limit specified above, the loss of books shall be written off by the competent authority as specified in the Delegation of Financial Powers Rules, 1978. iv) There may be no objection to the Librarian disposing of mutilated/damaged/ obsolete volumes to the best interest of the Library. However, the disposal of such volumes should be made on the recommendations of a three member Committee to be appointed by the Administrative/Ministry/Department which shall decide whether the books mutilated/damaged/obsolete are not fit for further use. v) Complete annual physical verification of books should be done every year in the case of Libraries having not more than 20,000 volumes and not lower than two library qualified staff. In case there is only one qualified staff the verification may be done as per sub-para (vi). vi) Complete physical verification at intervals of not more than three years should be done in the case of libraries having more than 20,000 but not more than 50,000 volumes. vii) Simple physical verification at intervals of not more than five years may be done in the case of libraries having more than 50,000 volumes. If such a sample verification reveals unusual or unreasonable shortages, complete verification shall be done. viii) The verification should always be subject to surprise test check by some independent officers. The decision regarding the selection of the staff to whom this work may be entrusted, should be taken by the Administrative Ministries/Departments and Heads of Department. (Ministry of Finance O.M.No. 23(7)-E.II(A)/83 dated 7.2.1984 and C.A.G.'s U.O. No. 1964-TA.II/21-83 dated 23.12.83.

Collection Evaluation

According to Webster's Seventh New Collegiate Dictionary, evaluation means 'an attempt to determine either the relative or intrinsic worth of something in terms other than monetary'. Evaluation is considered to be a fundamental aspect of a library and its administration. Evaluation of documents is a necessary part of the collection development policy and is an essential activity of a library. The quality of service provided by a library can only be improved through proper evaluation of the collection.

Surveys are one of the ways to implement evaluation and a library may take it up with its own staff or outsource it to an external library consultant. These surveys can be limited surveys or comprehensive ones that can cover areas , such as book collection, technical services, reader services, use of the library, the personnel, administrative organization, co-operative activities, financial needs, obstacles to library development, operation of special services, and so on, 'A

comprehensive survey might well include all these areas. But even a limited survey may need to cover several related areas'. Quantitative measures, such as adequacy of the documents may be included as part of the collection evaluation. However, it is more important to look at qualitative measures, such as appropriateness of the collection and scope of the materials procured. Measuring quality and appropriateness of the documents is a task where help of faculty, research scholars and even students can be taken.

Standard bibliographies: Bibliographies, both general and specific can be used as guides. Beyond this, the use of checklists of selected reference books and periodicals can also be made.

To find out if the collection has sufficient and adequate information for class lecture preparations, individual research needs and student assistance, questionnaire surveys to obtain faculty observations can be conducted. Likewise, surveys asking research scholars to evaluate the usefulness of the stock can be carried out.

Another way that can provide information on the collections is by analysing borrower records, inter library loan borrowings and records of all requests made to the library by users for books that were not available in the library.

In a small library, it is possible to do a thorough physical check of the book shelves. This kind of check can expose discrepancies, such as gaps in periodical sets, too many duplicate copies of certain titles, large number of obsolete materials and other characteristics of the book stocks. A mere review of the library catalogue will not be able to spot and throw up these types of discrepancies.

There is no point in doing an evaluation and not taking any action on the outcomes. Each evaluation exercise must be followed by some action to rectify the discrepancies and augment the collection. The form and nature of the action that a library will undertake will be determined by the library's acquisition policy and its financial resources.

Finally, the strength and weakness of a collection can be highlighted with the help of a well-organized and meticulous exercise of evaluating the library's collection. Consequently, the outcomes from the evaluation exercise can be used to reinforce the long-range plans of the collection development policy to build up the collection. This may necessitate the redefining of the acquisition and weeding out policies of the library, if necessary.

Check Your Progress

1. What does an active preservation program encourage?
2. Define stock taking.
3. What is evaluation?

13.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. In a library, an active preservation program encourages respect for the library and its collections, decreases the loss of materials through neglect or carelessness, and conserves resources through the application of preventive and corrective measures.

2. Stock taking is defined in Harrod's Librarians' Glossary as 'the process of taking stock by checking records of books possessed with copies on the shelves or records of books on loan'.

3. Evaluation means 'an attempt to determine either the relative or intrinsic worth of something in terms other than monetary'.

13.4 SUMMARY

- Preservation is a vital component in any activity involving introduction of library materials into collections (selection, acquisition, and cataloguing) and handling by library staff and users.

- Active participation and leadership in the preservation program is the responsibility of all staff. The responsibility of preserving and conversing materials in a library is in the hands of a library archivist.

- We should recognize that non-book materials and rare collections cannot be stored in the same way as books; they need distinct types of shelves.

- Proper care is essential to help increase the life of the materials and also to guard against the loss of these materials.

- Climactic conditions and sudden changes in them can play a big role in the destruction of library materials.

- In a library, books are very frequently used and the wear and tear is considerably high. Due to this, the books will need immediate attention as minor repairs, mending and binding may be required to preserve the collection.

- Shelf rectification is the activity of thoroughly reading each shelf and putting back in proper order all the books that have been misplaced.

- A library's stock of material needs to be verified from time to time. Documents on shelves and also those issued on loan need to be verified. This process is called 'stock verification' and sometimes also known as 'Stock taking'.

- Evaluation is considered to be a fundamental aspect of a library and its administration. Evaluation of documents is a necessary part of the collection development policy and is an essential activity of a library.

• Surveys are one of the ways to implement evaluation and a library may take it up with its own staff or outsource it to an external library consultant.

13.5 KEY WORDS

- **Bibliographies:** These refer to lists of books referred to in a scholarly work, typically printed as an appendix.
- **Reference Books:** They refer to books intended primarily for consultation rather than for consecutive reading.
- **Preservation:** It means the act of keeping something the same or of preventing it from being damaged.

13.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Whose responsibility is it to conserve and preserve library materials?
2. What types of shelves are needed for rare collections?
3. How is evaluation an essential part of the collection development policy of a library?

Long Answer Questions

1. Describe the protective methods for the conversation of library materials.
2. What is shelf rectification? What are its advantages?
3. Define shelf verification. What are its advantages and disadvantages?

13.7 FURTHER READINGS

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UNIT 14 RECENT DEVELOPMENTS

Structure

14.0 INTRODUCTION

Academic libraries are important and integral to educational institutions. It is important to ensure that the academic libraries are equipped with the right type of information materials and equipment so that the needs of the users can be met. Academic libraries in India have undergone development and changes since their inception. The development of academic libraries can be attributed to the development of information technology and the impact it has had on the manner in which information is stored, maintained and accessed by the users. Information technology has today enables academic libraries to operate in a completely automated manner to meet the needs of all types of users. This unit will discuss the recent

14.1 OBJECTIVES

After going through this unit, you will be able to:

- Examine the development of academic libraries in India

- Explain the impact of information technology on library development

- Discuss why academic libraries need to continue the development process

14.2 RECENT DEVELOPMENTS IN ACADEMIC LIBRARIES AND ITS SERVICES

An academic library is the centre of intellectual and literary life of an institution. An academic library is set up with the purpose of meeting the information needs of students and faculty members and aids the teaching, learning and research process. An academic library maintains several information materials to make sure that the needs of all types of information users are catered to. Academic libraries play an important role in supporting the education system and culture of a college or university.

Academic libraries in India have undergone several changes over the last several years. In fact, academic libraries have developed from mere centres from reading of books to centres where information can be accessed and retrieved freely using a wide range of tools and methods. The development of academic libraries in India can be divided into three distinct periods:

- Ancient period
- Medieval period
- Modern period

Talking of academic libraries in ancient India, we know that there were institutions of higher education like Nalanda, Kashi, Taxila, Vallabhi, and so on. Taxila University was not an organized university but did maintain a collection of books and other information resources that were used for imparting education in several subjects. The collection of books was the property of the family and was to be used only by those who came to the University for special and higher studies. Nalanda University was famous for Hinayana studies and had very good and well-established libraries. In fact, the administration of this university always felt that teaching was incomplete without libraries. Libraries, therefore, occupied an important position in this university and three different libraries were established in this university. The University of Vallabhi also had its own library with a good collection of books. Nadia University in Bengal also had library facilities that were made use of to impart education to the students.

In medieval India, education was limited to a small section or group of people. When Muslims started ruling India, special attention was given to the development of libraries in educational institutions. During this period, a separate building was not allocated for library space in the educational institutions. Most of the books were collected and maintained in mosques. The Muslim rulers worked to enrich these libraries in every possible manner. To start with, the Tughlaq Dynasty built at least a thousand madrasas and each had a library of its own. All Mughal rulers were very fond of books and reading and therefore had a library of their own. Most Mughal rulers including Akbar furthered education of people and built several schools and colleges for promoting education. The Sultan of Kashmir also constructed several Madrasas with libraries. Tipu Sultan also established a number of libraries in his territory. Muslin rulers in fact patronised libraries in education institutions as well as their palace libraries.

In modern India, the development of academic universities further took place at a fast pace. Post-independence period saw the establishment of the UGC that promoted the establishment and development of academic libraries across all major universities in India. Various committees and commissions were set up by the UGC and the government to establish academic libraries and ensure that they maintained a good collection of information resources and materials. Several development schemes were also implemented by the centre and the state governments for the development and establishment of academic libraries in Indian universities. Some of these development schemes included as follows:

- Granting of funds for enriching and adding to the library collection.

- Launching and implementing various activities and programs that increased not only the use of academic libraries but also enhanced the skills of the library personnel.

- Special grants for upgrading library facilities and services so that all users could be catered to.

- Upgrading the standard of academic libraries in the various state universities of the country.

The implementation of recommendation of various committees has led to the development of academic libraries in almost all institutions of higher education in India. In fact, some universities have a great collection of information materials.

The development of academic libraries in India can also be associated with the role that several influential factors have played. Student organizations, professionals and governments have all played an important role in the development of academic libraries in the country.

- **Role of professional associations:** Several professional associations like the Indian Library Association (ILA) and Indian Association of Special libraries and Information Centre (IASLIC) have taken up responsibility to develop academic libraries. These associations organise seminars, workshops and training programs for the colleges and universities. These associations make colleges and universities aware of the benefits of academic libraries and also help various colleges and universities set up computer bases library system and services.

- **Role of student organizations:** Students are the primary users of academic libraries wherein they find information that aid their leaning and research processes. The demand of modern facilities and better collection of books by student organizations has in many ways influenced the development of academic libraries.

- **Role of government:** The centre as well as the state government realises the fact that libraries play an important role in higher education in India. The governments have implemented many schemes and programs to make sure that the institutions of higher education in India are provided with good libraries with all infrastructures in place. In fact, the governments also sanction grants and financially aid colleges and universities to set up good academic libraries. The UGC as the main body makes all necessary efforts to ensure that the academic libraries are computerised for easy maintenance of information.

- **Role of library services:** The academic library is viewed as information centres these days and not a mere store-house for information resources and materials. The library services including the collection, maintenance and dissemination of information materials in the academic library has impacted the development of academic libraries. It is required that these services be spontaneous and aided with the required tools and technology so that the

information users can access all relevant information in a quick and easy manner.

It is important to develop academic libraries because of the following reasons:

- Developed academic libraries with all essential services and infrastructure uphold the image of a college or university as a good seat of learning. When academic libraries are not well developed in colleges and libraries, prospective students think twice before getting admission in the same.

- It is important that academic libraries be well developed so that teaching and learning can be aided at every step. It is important to have developed libraries so that education can be imparted in the most optimal manner and also research is encouraged for students as well as faculty members.

- It is important that academic libraries be developed so that these can collect, organize and disseminate information as and when required in the right manner. Well-developed academic libraries always maintain a good collection of information resources in an organised and categorised manner. This allows the information seekers and other users of the academic library to find the relevant information easily and also retrieve it for use.

- Development of academic libraries is essential to maintain statistics in terms of the number of information resources that are present in the library. This helps the library personnel to know about the missing books and information materials and also maintain a record of the issues books and resources.

- Development of academic libraries is also essential to provide a single point access to all information resources in the colleges and universities. Developed academic libraries ensure that all information resources are accessible by means of the right tools and techniques for use by the information seekers.

The development of information technology has also led to the development of academic libraries. In fact, the pace at which information technology is developing, academic libraries have incorporated several technologies to change the manner in which they function. Information technology has an impact on all aspects of an academic library- be it organizing the collection of information materials or the use of library services.

With information technology, academic libraries have changed the manner in which they access, store, retrieve and manipulate information. Computer technology, communication technology as well as mass storage technology is used in academic libraries to store, access and retrieve information materials in an easy and quick fashion. The introduction and integration of information technology in academic libraries has brought about a change in the patterns of work of library personnel as well. In fact, with the help of information technology, library personnel today work in a more productive manner than before.

Academic libraries are also using information technology and techniques to automate their core functions, implement efficient and effective library cooperation and resource sharing networks, implement management information systems,

develop institutional repositories of digital local contents, and digital libraries. With the use of information technology, it is not possible for academic libraries to provide library services like document delivery, reference services as well as user services in a more effective and efficient manner.

The emergence of the Internet as the largest information repository has also impacted the development of academic libraries. Academic libraries now need to make sure that they have facilities that can allow the users to access information over the Internet. To make this possible, most academic libraries are developing networking facilities and allowing internet use for information seekers so that information available in the form of digital content can also be accessed by the information users and seekers. Academic libraries have also developed web based services to make sure that information can be accessed by several users at the same time and from across various information repositories.

One of major developments that have taken place with respect to academic libraries is library automation. Library automation simply refers to the process wherein the library works or functions in an automatic manner. According to the Encyclopaedia of Information and Library Science, 'automation is the technology concerned with design and development of the process and systems that minimizes the necessity of human intervention in their operation. Library automation may be defined in simple sense as ¯ a process of mechanization of library operations which are of a routine and repetitive nature. This covers usually housekeeping operations such as acquisition, serial control, cataloguing, circulation, references and administration work.' In a wider sense, it can be said that computerization of all library operations is known as library automation.

The reason why library automation has taken place in most academic libraries is to ensure that the process of information collection, retrieval, maintenance and dissemination can be done in a quick and more efficient and effective manner.

Library automation is in fact required for the following several reasons:

- To obtain higher operational efficiencies and increase productivity.

- To relieve professional staff from clerical chores so that they can look into other orientation and assistance services.

- To improve the quality, speed and effectiveness of the various library services.

- To allow access to remote users who cannot visit the physical library. Academic libraries with remote users need to automate their library functions and services so that the remote users can access all relevant information.

- To improve access to information resources available over various networks and also the web.

- To improve the management of library resources and services.

- To facilitate wider access and dissemination of information resources, products and services.

• To enable rapid communication with other libraries and professional peers.

• To enable sharing of resources and facilities across various academic libraries.

Library automation has taken place in the following areas of academic libraries:

• Acquisition of library and information resources.

• Cataloguing and indexing services.

• Circulation services.

• Library management, organization and administration.

• Online access to information materials.

• Resource sharing.

• Desktop publishing.

• Information retrieval.

• Routine operation and library services.

• Networking facilities.

• Database searches.

With the development of information technology, another development that has taken place across the several academic libraries is the setting up of library consortia. Library consortium is a collective activity of a group of libraries towards a common goal of sharing resources. Library consortium is a community (a cooperative) of two or more information agencies which have formally agreed to coordinate, cooperate or consolidate certain functions to achieve mutual objectives and mutual benefits. The need for a library consortium arose because of the following factors:

• Increasing speed at which information is being created and used.

• Financial crunches of certain academic libraries.

• Introduction of new technologies in library services.

• Scattering of information in various formats.

• Increasing and different information needs of users.

The development of library consortia has the following advantages for academic libraries:

• Promotion of collaboration in different library activities and services.

• Better sharing and use of the existing information resources and library services.

• Professional development and training of library personnel.

• Promotion of new strategies and methods to maintain academic libraries.

• Undertaking digitization processes in an easy and cost-effective manner.

Library consortia have changed the face of academic libraries in India by providing a platform wherein library resources can be shared easily. This also eases burden on academic libraries that are unable to maintain large information resources and meet the information needs of all types of users.

The changes and developments taking place in academic libraries has led to the emergence of different types of libraries and the manner in which academic libraries are viewed and used. The following are some different types of libraries that have evolved because of the developments that have taken place in academic library scenario.

- **Hybrid library:** A hybrid library is a library that houses traditional print library resources as well as an increased number of electronic resources. Academic libraries that are hybrid have a printed books and magazines and also electronic and downloadable forms of e-books and journals. These libraries cater to the information needs of various types of users.

- **Automated library:** An automated library is a library that has computerised access points as well as computerised operations. An automated library is a completely computerised library system wherein information access and retrieval becomes easy and quick.

- **Digital library:** A digital library is a library where most of the information resources are maintained in a digitised form. Users can access all information in a digital library via computer systems and networks. Digital libraries ensure quick access to all information materials and also allows information to be stored and retrieved in a more efficient and effective manner.

- **Virtual library:** Virtual libraries are libraries that store information in digitised form and all the information is accessible via computer networks. The Internet is the main network that allows users to access information on a virtual library. In essence, a virtual library makes it possible for users to access global information.

The academic libraries have developed leaps and bounds since their inception. With the evolving and ever-changing information technology, academic libraries are further geared for more development and changes. Academic libraries are bound to play a role of curators as well as purveyors of high quality education. Academic libraries are also furthering and funding high level research with the help of high-tech infrastructural facilities. In fact, innovations are taking place every day to make academic libraries more effective and efficient.

There are several reasons why academic libraries are being pushed to develop using new techniques and technologies. Some of these include:

- **Research data management:** With research taking place in almost all fields and the publishing of these research reports in digital form is making these reports available to students as well as faculty members. This allows the information users to work on research projects already worked upon and add to them after carrying out research at their own end. This requires

techniques and technologies to manage the wide range of research reports in a digitised format. Academic libraries that deal with management of research information need to develop using information technology.

- **Improving user experience:** The information users keep on accessing and retrieving information from the academic libraries. Users all the time new services and tools that can aid them in the process of accessing and retrieving the right information. This is one of the main reasons why academic libraries need to adopt new technologies. The academic libraries need to make use of techniques to develop high quality and engaging content for the users.

- **New creators of knowledge:** With information explosion, the users of information are now also becoming creators of information. This means that more and more and new information is being added each day to the already present information materials maintained by the academic libraries. Users now don't visit academic libraries to merely access information but also to add value and develop their creativity skills. To meet the new need of information users and creators, the academic libraries need to make use of new techniques and methods.

- **Need for improving library spaces:** With information now available on the Internet and easy access to it, most information seekers do not visit the library. The academic libraries therefore are fast becoming less frequented centres. To make sure that academic libraries are visited often and maintain their aura of being the heart of an academic institution, they need to develop and integrate new technologies and techniques. This calls for improvement of library spaces that can accommodate the needs of all types of information users. In essence, library spaces these days need to be made more user-friendly in terms of providing appropriate tools and techniques so that these can be used for accessing information by a large number of users.

- **Cross-institution collaboration:** The need for institutions collaborating to share information materials is picking pace. To make sure that this collaboration is effective and efficient, academic libraries need to develop by implementing and integrate the right tools, technologies and techniques. Academic libraries need to make sure that the technologies they adopt are able to digitise the information in the most optimal manner and also allow easy access to this information over the network of libraries.

In the near future, to maintain their aim of establishment and meet the user information needs, academic libraries are expected to adopt several technologies. A few of these technologies that academic libraries can play with and adopt include:

- **Big Data:** The aim of academic libraries is to serve real user needs. Big Data as a technology can enable academic libraries to collect, curate and analyse the information materials in the right manner. With Big Data, academic libraries can easily collaborate with each other and meet the information

needs of a wide range of users. The integration of Big Data can also help academic libraries make more informed decisions that favour the information users.

- **Digital Scholarship Technologies:** Academic libraries also function to help scholars understand the process of research and also experiment with new methods of research. Digital scholarship technologies enable the scholars visiting the academic libraries to work with content in a manner that helps them to produce scholarly inquiry and thereby complete their research in a more organised manner.

- **Library Services Automation Tools:** In addition to an academic library being automated, the library can also try and integrate library services automation tools. These library service automation tools help in automating all library services and make then web-centric. This in turn helps the academic libraries to improve the effectiveness and efficiency of the library services being offered. The adoption of these tools also helps the academic library to keep pace with operational needs that keep on changing as the type of users changes in the library. These tools also help the academic library to serve a large number of information seekers and users.

- **Artificial Intelligence:** Artificial intelligence can be integrated as a technological innovation in academic libraries to improve research processes, library services as well as user access and use of information. Artificial intelligence can be further used to ensure that the information is being used in the most optimal manner and also ethically.

Academic libraries face several challenges as well when it comes to development using new technologies and techniques. Some of these challenges include:

- A universal program or design principle cannot be used and accepted to meet the information needs of all users and also improve overall user experience.

- It is a challenge for academic libraries to implement technologies on information materials that are not created keeping diverse needs of users in mind.

- It is important to improve digital literacy to ensure that the technologies can be adopted by academic libraries to meet the user needs. This is in fact a big challenge as not all users and personnel are ready to accept digital changes and new technologies easily.

- Academic libraries also find it tough to maintain the inter-operability, integration and collaborative techniques and technologies because of the huge infrastructure required to do so.

- The cost of integrating and adopting new technologies and techniques is a lot and many academic libraries cannot bear this cost.

- It is a challenge in this digital information age for academic libraries to maintain their integrity and also develop acquisition strategies. Academic libraries also face challenges to maintain their physical space to meet the information needs of rising number of users.

Check Your Progress

1. What was Nalanda University famous for?
2. List three areas where library automation has taken place in the areas of academic libraries.
3. What is a hybrid library?
4. Define automated library.

14.3 ANSWERS TO CHECK YOUR PROGRESS

1. Nalanda University was famous for Hinayana studies and had very good and well-established libraries.

2. Library automation has taken place in the following areas of academic libraries:
    - Acquisition of library and information resources.
    - Cataloguing and indexing services.
    - Circulation services.

3. A hybrid library is a library that houses traditional print library resources as well as an increased number of electronic resources.

4. An automated library is a library that has computerised access points as well as computerised operations.

14.4 SUMMARY

- An academic library is the centre of intellectual and literary life of an institution.

- An academic library is set up with the purpose of meeting the information needs of students and faculty members and aids the teaching, learning and research process.

- In modern India, the development of academic universities further took place at a fast pace. Post-independence period saw the establishment of the UGC that promoted the establishment and development of academic libraries across all major universities in India.

- The development of academic libraries in India can also be associated with the role that several influential factors have played.

- Student organizations, professionals and governments have all played an important role in the development of academic libraries in the country.

- It is important that academic libraries be developed so that these can collect, organize and disseminate information as and when required in the right manner.

- The development of information technology has also led to the development of academic libraries. In fact, the pace at which information technology is developing, academic libraries have incorporated several technologies to change the manner in which they function.

- Academic libraries are also using information technology and techniques to automate their core functions, implement efficient and effective library cooperation and resource sharing networks, implement management information systems, develop institutional repositories of digital local contents, and digital libraries.

- One of major developments that have taken place with respect to academic libraries is library automation. Library automation simply refers to the process wherein the library works or functions in an automatic manner.

- Library consortia have changed the face of academic libraries in India by providing a platform wherein library resources can be shared easily.

- The changes and developments taking place in academic libraries has led to the emergence of different types of libraries and the manner in which academic libraries are viewed and used.

- In the near future, to maintain their aim of establishment and meet the user information needs, academic libraries are expected to adopt several technologies.

- The aim of academic libraries is to serve real user needs. Big Data as a technology can enable academic libraries to collect, curate and analyse the information materials in the right manner.

- It is a challenge in this digital information age for academic libraries to maintain their integrity and also develop acquisition strategies.

14.5 KEY WORDS

- **Artificial Intelligence:** It is the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.

- **Library Consortium:** It means a group of libraries who partner to coordinate activities, share resources, and combine expertise.

- **Platform:** It means an opportunity to voice one's views or initiate action.

• **Big Data:** It refers to extremely large data sets that may be analysed computationally to reveal patterns, trends, and associations, especially relating to human behaviour and interactions.

14.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Why do academic libraries need to carry out a development process?

2. What is the role of students, professional bodies as well as governments in developing academic libraries?

3. What is library automation?

4. What are the challenges that academic libraries face when it comes to development using new technologies and techniques?

Long Answer Questions

1. How has information technology impacted the development of academic libraries? Discuss.

2. Examine the need of a library consortium.

3. Explain why academic libraries need to undertake the development process on a regular basis.

4. Discuss the different types of technologies that libraries can adopt in the future.

14.7 FURTHER READINGS

Singh, Gurdev. 2015. *Academic Library System and Services*. New Delhi: Ess Ess Publications.

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