CHAPTER – 1
INTRODUCTION

Today, the library community is realizing that computers and information technology (IT) are the tools of new information era which was started with Gutenberg. Now a day’s libraries of all types are embracing digital collection, although many other libraries still offering both print and digital collections. New purchases such as journals, magazines and abstracting and indexing services are heavily weighted toward digital, while digital books (e-books) are only the beginning to become a presence in library collections.

Libraries prefer e-resource collections for several reasons, and not limited to digital journals which can be linked to indexing and abstracting database. These electronic databases can be accessed from user’s home, library or dormitory. The usage statistics through e-library can be recorded in a better way when compared with print collection. The e-resource collections are relatively easy to maintain. Total processing and space costs of electronic collection may also result in reductions of library costs. Such a dramatic switch from print collections to e-resources collections has an impact on library users and there perceptions about technical colleges.

The famous quote by Thomas Carlyle\(^1\) is that the true college library is a collection of books may have been true in those days, but it is not true today. This is an electronic age where the libraries of technical colleges must be more than a collection of books. Today, there are numerous changes in libraries. These changes are from custodian of books, to services-oriented information provider, form one medium to multimedia, from own collection to library without walls, from in good time to just in time, from in sourcing to out sourcing, from local reach to global reach, and from we go to the library, library comes to you. A library system consists of three important components such as books, staff and users. A library is a social institution built for civilized and literate society. It grows and develops in response to social conditions and needs for equipping the people with necessary proportion of accumulated knowledge and preparing them for successful social life. The library is also called as memory of human race. According to pierce Butler\(^2\), “Library is a necessary unit of social organization which is effectively planned and utilized for transmitting the accumulated knowledge and experience to the individual members.
of the society through instrumentality of books and other graphic accounting and holistic materials such as charts, maps, phone records, microfilms, etc. Based on the types of clientele and services required, the libraries can be classified as public libraries, special libraries, academic libraries, contact libraries and national libraries.²

Technical colleges are attached to teaching and learning of technical skills and meet the needs of different and specific levels of academic community. According to Prof. Issac “Library attached to a technical institutions works like a technical school. The major role of a technical college library is to help to achieve the goals and objectives of its parent institutions.”

1.1 Higher Education System in India

Education is one of the most crucial services in the economy. The quality of education has direct impact on the quality of life. The higher education institutions of the country have been producing the quality manpower according to the need of the nation. The advent of information technology products like computer and internet have further made it possible to spread the higher education even in remote corners of the country.

The technical college supplements special academic institution and plays an indispensable role in the dissemination of information and knowledge they collect, store and disseminate information and also performs the laboratory function by making its resources to be used by the academic community in the learning process. According to Deshpande, K.S. “Technical colleges serve as resources for teaching, learning, publication and research programmes of institutions of higher education.”

Technical colleges seek to promote the objectives of higher education. An engineering college library is a part of the colleges system and thereby it aims to fulfill the objectives of its parent organizations. By accumulation and organization of books, manuscripts, journals, and knowledge in different formats the technical colleges serves for the conservation of the knowledge and ideas, an active forces in teaching, learning process, research and extension programmes of the college. The main objective of the technical colleges is to meet the reading and informational requirements concerning teaching, research and other academic programmes of the college. Thus, the aim of a model technical college is to faction as a dynamic institution of
technical education. The colleges with competent faculty and advanced resources are in a position to make significant contribution to different areas of knowledge. However, technical colleges have become complex organization, in a developing country like India. The expectations from technical colleges are very high. It is expected that the people trained in these colleges should play a sincere roll in the building of nation.

1.1.1 Objective of Technical Colleges

A library plays a pivotal role in ensuring the success of higher degree of research. The important activities of technical colleges include the collection development, Reference service, Circulation, Document Delivery, User Education, and access to electronic resources etc. The technical colleges are likely to provide cost effective and reliable access to information using the state-of-the-art information technology tools.

The basic objective of the technical colleges is to be as a dynamic instrument for explaining the expanding the horizons of information. The library endeavors to make the legitimate needs and demands of the academics engaged in advance research and encourage students to develop the lifelong habits of good reading, study and follow a line of investigation.

Objectives:

- Conservation of knowledge amassed from times immemorial,
- Dissemination of this knowledge through teaching, publication and extension programmes,
- Extension of knowledge through research work by teachers and other research workers, and
- Helping the teachers and the taught to achieve the highest academic honours.

A technical colleges is no longer a part of an ivory tower world, it is a potential service oriented institution, accountable for every aspect of its performances.

The fundamental role the library as a dynamic instrument of technical education is:

- To acquire process. Organize and make available varied types of reading materials for meeting the needs of different levels of user;
• To guide scholars and provide them the resource useful for enhancement of research projects;
• To keep the faculty members informed of the latest amount of resources through in their fields of specialization;
• To establish a information centre in library and render readers advisory service for the maximum use of library resources;
• To adopt Information computer technology to provide purposeful service in minimizing possible time; and
• To keep to authorities informed of the achievement and library output of the college, to seek support and financial assistance;

Information technology has revolutionized the information handling activities in the technical colleges during the past few years. The information society demands the following technologies, i.e.
• Literature search service
• Current awareness services and SDI services to keep the readers aware with up to date with the current advances in the subject field by providing monthly list of articles or contents pages of journals recently received; new accessions lists; in house abstracting and indexing services etc.;
• Document delivery services i.e., delivery the physical document to the user either from the library collection or from other sources. Inter library loan online ordering, photocopying services, support of translation and communication channels like telfacsimile, etc.
• Reference service both short range, and long range providing specific pieces of information and also by searching for current and retrospective literature, i.e. complex queries;
• Translation services i.e. either to obtain the required translation copies of the foreign language documents from the translation pools or translation banks.
• Referral services to the scholars by directing them to the most like institutions, libraries or individuals who possess the involved in information processing consolidation, repackaging and retrieval be merged so as to evolve an integrated system; capable of providing diversified services. In this direction the automation of individual technical colleges is a first step rather a pre-
requisite for the development of such an integrated technical colleges and information system.

1.1.2 Technical College Services

The library services can be praised when it brings right contact between right reader and the right document at the right time. In other words popularity of library depends on the extent to which it provides satisfactory and optimum services to its clientele. Library services are two types – technical services and reader’s services.

Technical services are also known as work behind the screen. In other words, technical services are the preparation for providing better reader services, which include acquisition of materials cataloguing, binding, classification, weeding out of reading materials, etc. On the other hand reader services include, reference services, circulation work, information service, bibliographic services, etc. wherein the library staff is in direct contact with the readers to assist them. A technical college provides the other services, that is bibliography instruction, lending services also and library orientation, provision of general and specific information, assistance in the location, searching of documents or bibliography, preparation of abstracting and indexing services, reservation of documents, interlibrary loan, holding or library exhibitions, including display of new arrivals, current awareness service, reprographic service and translation services.

1.1.3 Levels of Evaluation:

There are two levels of evaluations i.e. effectiveness, and cost-benefit. The effectiveness should be measured in terms of how well a service satisfies the demands placed upon by its users. Such an evaluation can be subjective (e.g. conducted by gather via questionnaire or interviews) objective (e.g. the measurement of success in quantitative terms), or a combination of the two. There are the ingredients through which the library services can be evaluated on the basis of assembly data from the users.

Cost – effectiveness is concerned with is in-house operating efficiency. Such a study measures how cost efficiently the system is satisfying its objectives, i.e. meeting the needs of its user; it will expose the staff efficiency and their credit facility in satisfying the user’s needs.

- Co-ordination between different levels.
• Information sources are made available and accessible to every user in the system.
• Union catalogue of the total resources should be created along with local catalogue; in this connection a computerized online catalogue may prove more useful.
• The library hours of opening must be convenient of the users.
• Users awareness of the existence of resources available at different locations, and
• All barriers to access resources must be removed or decreased.

1.2 Collection Development
1.2.1 Traditional Collection

Suitable collection and its collection building is a process of prime importance for technical college libraries. Most of the users, when asked to assess and technical libraries, will list the strong point of the collection high on the major criteria. Science and technology scholar collection are not the easiest ones to develop successfully in view of the complexity of the subjects and cost involved, the large numbers of choice to make because of the sizeable quantity of book and journals from which to select and the difficulty certain gray area publications such as technical project and reports.

<table>
<thead>
<tr>
<th>S.no</th>
<th>Particulars</th>
<th>Institutes</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Separate section for e-resources</td>
<td>8</td>
<td>38.09%</td>
</tr>
<tr>
<td>2.</td>
<td>No separate section for e-resources</td>
<td>13</td>
<td>61.91%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>21</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Table 1 shows the status of e-resources section 61% of the technical colleges have no separate section of e-resources, while only 38% colleges have separate e-resources section.
Table-2: Computer Engaged in U.P. Technical Colleges

<table>
<thead>
<tr>
<th>S.no</th>
<th>Particulars</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Less than 100</td>
<td>03</td>
</tr>
<tr>
<td></td>
<td>14.28%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>More than 100</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>85.72%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>100.00%</td>
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</table>

Majority of the technical colleges (85%) have more than 100 systems i.e. between 100 to 300, while only 14% colleges have made computer available to users.
It is almost impossible for any technical colleges in India to build the collection to satisfy fully since the amount of literature published as seen above is so enormous and costly. The output of scientific and technical literature grows so rapidly that it would be neither feasible nor indeed reasonable for technical college libraries to acquire and stock all the scientific and technical literature throughout the world. Under the circumstances, particularly when there are limited funds available a system must be evolved to maximize the benefits on low cost without hampering the work of scientific research and development due to non-availability of the required information. This objective can be achieved by holding at least one copy of each significant technical documents produced all over the world is available for use in one of the technical in the country. This problem faced by the technical colleges in Uttar Pradesh also. No doubt there have been separate section established in few technical colleges but these sections are known as computer sections and only basic appliances have been housed for user’s service. There is not a single technical college in U.P. who has no computer section and running their libraries on traditional methods.

The major problem faced by technical libraries is the non-availability of selection tools for acquisition of scientific and technical publications published in India and the world. Due to the increasing costs of printing materials and technology, the cost of the scientific and technical publication has been raising tremendously. 

1.2.2 Scientific and Technical Periodicals

It is evident that scientific and technical literature is of prime importance for scientific and technical libraries. In spite of their costs and the problems associated with selection, handling and storing such literature, as journals are the key source of information for most of the scientists and engineers.

These problems can be solved to a great extent by constricting a centralize network of libraries with a central nucleus linked with several regional and local units located in the various geographical regions of the country by a network at various levels of libraries as follows:
(a) National Technical Libraries
(b) Regional State Technical Libraries
(c) Local Scientific and Technical Libraries
This could be achieved by a policy for coordinating the acquisition of scientific and technical publications and their distribution among different scientific and technical libraries because of the following benefits - (1) the libraries may avoid unnecessary work, (2) Undue duplication of material among libraries, can be avoided and (3) The available funds for the purchase of scientific and technical publications can be utilized for acquiring maximum number of publications. The local libraries should house such material to wet, the requirements of their users.

The regional technical libraries like regional engineering colleges libraries build up a collection of general works and maintain a general reference library. They collect and hold theses and dissertations prepared within their respective states. They act as regional coordinating agencies in the national cooperative acquisition programme. The national technical libraries like I.I.T. libraries build up national collections by complementing the branch and regional collections and by filling up areas not covered by them. A large reference library and a collection of bibliographical tools would be the core of the collection in the national technical library.

### 1.2.3 Collection Development in Technical Colleges

Materials acquired by a technical college should have some relevance with the parent organization and the potential need of its users. The main library collections for communication and information services in most of the technical colleges are books including, periodicals, standards, patents, reprints, trade literatures, maps, charts, films, slides, microfilms, microfiches, film loops, tapes, etc. Naturally, due emphasis is being given for the procurement of those materials. In the present day where specialization has become the order of the day, books render only the fundamental primary information. By the time books are published, the information contained therein becomes source of basic nature. The specialists/researchers of the day require the latest information in the fields of their specialization/research; therefore, it becomes imperative to acquire relevant periodicals, proceedings, transactions, reports, etc. Periodicals are much more important than books so far as latest knowledge is concerned. Libraries attached to the institutions of higher technical study and research-work cannot therefore complete in collection without periodicals. Moreover, the books and periodicals collection should be of a reasonable size so as to serve as a base for any research
and development work in particular fields of their interest. Some of the technically and industrially advanced countries publish their periodicals only in their own languages which create problems for the librarians and the library users who are generally ignorant of those languages. In modern era collections of libraries are transferred to microforms in place of paper document as large material can be stored in a small space and the pilferage may be minimized in this form. At present it would be neither possible nor feasible to acquire all the technical and scientific literature when limited funds are available as the growth of technical literature is enormous.

In developing countries like India, great responsibilities on specialists to keep themselves abreast of the latest developments on their fields of interest. There is also a tremendous upsurge in the inflow of literature and it is extremely difficult even for the research library and technical colleges to procure all the relevant materials.

1.2.4 Procurement System

There are many technical libraries, in India which prefer to procure periodicals directly from the publishers. This system involves four stages:

(a) Obtaining Performa invoice from the publishers for particular materials.
(b) Submission of Performa invoices along with completed application form to the Bank for release of foreign exchange.
(c) Remitting the foreign exchange along with order to the publishers in the shape of the bank draft.
(d) Receiving the materials from the publisher.

The system is however, not free from disadvantages, as:

(a) It involves more file work for individual correspondence with each publisher at all stages.
(b) It is difficult to ascertain about the delivery against payment;
(c) If the supply is not received it takes long correspondence to take refund.
(d) Publishers generally do not take that much interest for the supply of materials to the individual party as they take for the agents;

In U.P. Technical colleges there is insufficient budget; say less budgeted for e-resources as shown in the following table: e-resources are procured out of the budget allotted to books, periodicals or the equipments.

1.2.3.2 Through Agency

Collection development through agents is facilitating:
(a) The agent concerned consolidates the requirement and places centralized orders on behalf of individual parties;
(b) Easy recoveries from the agent who fails to supply the materials.
(c) The savings of national foreign exchange: as payment is made in local currency the agents are getting some discount from the publisher, thereby, saving some foreign exchange of the nation;
(d) Certain Indian agents are now supplying the materials by registered post without any additional cost thereby avoiding any missing of materials and
(e) Some Indian agents have now started air-speeded delivery of some their agency periodicals.

1.3 Use of in Microform

At present, information storage medium, which is being extensively used largely in advanced countries is microform, mainly microfilm, microfiche and CD-ROM. Information covering more than 3500 pages can be put on a single CD-ROM. Budget may be difficult as CD-ROM is cheaper than paper. The prices of the library materials are increasing day by day. As a result, we have to minimize the procurement of library materials as generally budget remains constant in most of the cases. Library is a growing organism, a, most of the libraries have to face space problem. Microform offer saving of space cost. For proper utilization of library open access system is desirable. But in practice more pilferages are found in open-access system and it may not be totally stopped in case of close access system also.

The modern library service calls upon a wide range of materials with which to provide its service to users. The acquisition of these materials is a skillful job demanding the sort of dedication that a housewife brings to the running of her home. Inspite of the fact that books are controlled as far as their price is concerned and cannot be solid to the general public at less than the cover price imposed by the publisher under certain terms; there are many ways that librarians can obtain reductions in prices both for books and for the many other materials that are purchased. There are various techniques used by librarians to stock their libraries.

1.4 Electronic Resources

The advancements in information technology, communication technology and information (literature) explosion all together have forced the libraries & information centers to go in for the changes in the information services. The use of CD-ROM
database is fast becoming popular in the technical college libraries. Since last ten years, a few Technical College libraries are using the on-line information retrieval for rendering the information services. In the 21st century many libraries are likely to use the on-line information retrieval facility for the services.

1.1.4 Information Services

The information services include the current awareness services and S.D.I. services. The glossary meaning of information service is “A service provided by, or for, a special library which draws attention to information possessed in the library or information department in anticipation of demand; this is done by preparing and circulating news sheets, literature surveys, reading lists, abstracts, particulars of articles in current periodicals, etc which it is anticipated will be of interest to potential users of the service”. Although the glossary meaning of the information services gives an idea that these rendered by the special libraries, these services no more are restricted to special libraries. These services are now rendered by the libraries of higher and professional educational institutions.

The abstracting service which is an important area of information service is likely to have changes in its basic structure. At present the abstracts are being prepared and published in the form of abstracting journal by libraries, professional societies, some private and government agencies etc. There is a delay in the preparation of abstracts. The printing and publishing of abstracting journals takes some more time. By the time the abstracting journals are received by the users, there is a delay of about six months.

Bourne observes that, “The print equivalents of some of the CD-ROM product are available in the developing countries. Thus the basic information is available. However the on-line services and the CD-ROM products often contain more sources than is available in the corresponding print product. Thus computer based searching of a database (on-line or CD-ROM) can provide an answer, that might not be found in a search of a printed index, for example, because a particular index access point like report number or contract number is not provided in the printed index, or it might provide an answer in minutes to a topic, that would take hours to search in the equivalent printed index. This is a great way to increase the productivity of a limited number of skilled professionals.” The use of CD-ROM databases and the on-line
information retrieval are expected to help a lot, for information services in India, to increase the maximum productivity, which is very essential.

The UNESCO publication which is meant to inform about the availability of the translations i.e. ‘Index Translationum’, which was so far available only in the print form, is now available on CD-ROM. To quote from the publicity brochure of UNESCO, “It comprises over 60000 references covering every subject (literature, social and human sciences, natural and basic sciences, art and history etc.). It is important to note that this CD-ROM replaces the paper edition. This is the example of the highly used publication from the international agencies like UNESCO publishing the information on the CD-ROM. It is expected that many such publications from internationals agencies/organizations will be the form of CD-ROM database.

1.4.2 On Floppy Form

A few current awareness publications by commercial agencies firms are now available in the computer readable floppy form. The ‘Current Contents’ publication of Institute of scientific Information, Philadelphia, is now available in both i.e. print form and floppy form. This is the change in the physical form of commercially available current awareness publication. Some libraries are subscribing to the ‘Current Contents’ in the form of floppy. Many more such commercially available current awareness publications are likely to be issued in the form of floppies. This will necessitate many libraries to go in for the purchase of required computer hardware.

1.4.3 Database Development in India

In some information centers, the information services are being rendered by the computerized database. The example of the national information centre of SNDT Women’s University, Bombay, NCSI, Bangalore and all the sectoral information centers of NISSAT could be cited. Apart from these, a few libraries/information centers are also rendering the information services through the computerized database. But in the 21st century it is anticipated, that the information service will be rendered only through the computerized databases. The information service will totally depend on the computer database. The computer technology and communication technology have changed the overall structure of the information services. To quote Rajagopalan, “Computer Communication, micrography and
audio-visual technologies have made a tremendous impact on the organization and provision of library and information services."

1.4.4 Standardization of Service

The standardization in thing/information service is always advantageous. Same is true of information service. The users of information services finds it difficult to use the information products which are not standardized. The standardization in future will be of great use, if the library/information centres starts functioning as a centre of the library/information network. There are different information/library networks being set-up in the country like INFLIBENT etc. If the database is created in the standardized format, it is easy to render the information services. The standardization is required more now than earlier. The libraries functioned as almost independent units earlier.

1.5 Objective of the study

The proposed study focuses on the policies and practices of development and management of e-journals in U.P. state technical college libraries and examine the various criteria for selection and evaluation of e-resources.

Keeping these facts in the mind the objectives of the study are as follows:

1. To reveal the present status of e-journals in the technical colleges libraries.
2. To find out collection development policies of e-journals adopted by the technical colleges libraries and evaluate such policies and practices.
3. To explore the current practices of selection and evaluation of e-journals.
4. To recommend practicable guidelines for improved collection development programme.
5. To make an overview of the existing collection development policies and strategies and their application to Indian technical colleges library environment.
6. To examine the different factors which facilitate information/source/services to the user;
7. To correlate the adequacy of the collection vis-a-vis research needs of the users;
8. To identify the various channels of electronic journals through which information is accessed by users i.e. consortia;

1.6 Methodology
Methodology in research is a way to solve the problem, to unfold the probable answer, and to test the hypothesis stated. As there are many roads leading to a city, likewise there are many methods to solve the problems of research.

The main purpose of the present study was to study the electronic journals and services provided to the users of U.P. state technical college libraries. The questionnaire based survey method was used for data collection. Due to constraints of time, about 600 questionnaire were circulated among the users, out of which 400 users responded. The analysis of the data for the present study was done by applying simple percentage.

However, the labels and figures drawn with the help of data collected through questionnaire have been interpreted and discussed in the exclusive chapter.

Tables

- Facilities available in the library.
- Information retrieval services rendered and used
- Level of satisfaction about various types of services in the library
- Various channels of accessing information
- Problems facing in using/searching information through electronic sources.
- In addition to tables, pie, diagram and bar chart are also prepared.

Despite one librarian’s statement that “electronic information is not even for libraries or librarians, but the end user”, its impact on libraries is becoming more intense. During the past several years, electronic publications and sources have been produced and used at an accelerating rate.

1.7 Research Hypothesis

The following hypothesis has been incorporated for the present study:

1. Present status of e-journals in the Technical Colleges Libraries is sufficient?
2. The steps for implementation for the e-journals collection development and library cooperatives are effective?
3. The situation of the man power working in the Technical College Libraries is sufficient?
4. E-journals and consortia are provided properly.

1.8 Limitation of the Study

The study will deal with:
1. Technical college libraries of U.P.
2. All technical colleges at state level are not considered for study because this cannot find a proper comparison and not possible to cover all institutes due to limited resources and time.

**Name of Technical Colleges considered for study:**

1. Sachdeva Institute of Engg. & Technology, Agra (SIETA)
2. Aryan Institute of Mngt. & Technology, Agra (AIMTA)
3. Anand Engineering College, Agra (ANECA)
4. DEI Engineering College, Agra (DEECA)
5. RBC College of Engg. & Technology, Bareilly (RBCTB)
6. Innertis Engineering College, Bareilly (INECB)
7. ACME Institute of Mngt. & Tech. Bareilly (ACMEB)
8. IIMT Institute of Engg. & Tech., Meerut (IIMTM)
9. Subharti Engineering College, Meerut (SUECM)
10. Meerut Institute of Technology, Meerut (MEITM)
11. GLA Engineering College, Mathura (GLECM)
13. ABSE Institute of Technology, Ghaziabad (ABITG)
14. Krisna Institute of Engg. & Tech., Ghaziabad (KIETG)
15. Sri Ganpati Institute of Technology, Ghaziabad (SGITG)
16. Indraprastha Engg. College, Ghaziabad (INECG)
17. TMU Engineering College, Moradabad (TMECM)
18. IEC Institute of Technology, Gr. Noida (IITGN)
19. G.L. Bajaj Institute of Mngt., Gr. Noida (GITGN)
20. Shabib Institute of Engg. & Tech., Saharanpur (SIETS)
21. Bhagwant Institute of Tech., Muzaffarnagar (BHITM)

**References:**


