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Overview of Information Technology in Engineering College Libraries

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Abstract- This overview presents a brief study about the use of information technology in libraries of engineering colleges. IT has changed the scope of libraries and has provided students and teachers with new and better ways to improve their educational experience. In this overview, we will focus on the diversity of uses of key information technologies, such as the use of digital resources, Internet connectivity, online user experiences, and the use of technological tools in the management of educational resources. This overview sensitively analyzes the major benefits and challenges of modern use of information technology in engineering educational institutions. The purpose of the study is to provide an in-depth understanding of the elements of the use of information technology to support the improvement of curriculum and library services.

Keywords- Library, Information Technology, Technology, College, Educational Experience

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INTRODUCTION

Engineering education in India has seen a major change in the last few years. Due to the generous increase in interest towards high quality education, information and communication technology has been accepted to enhance the education endeavor. Academic libraries in engineering institutions are well-known information organizations and play an essential function in meeting the information needs of users. The main objective of an academic library is to provide services to sustain the educational, educational, financial and scientific endeavor of the users of its parent institution. The importance of library in technical education like engineering and technology has been realized by the regulators of technical education and research in India and the regulatory body of engineering and technology education in India, All India Council for Technical Education (AICTE), has set some minimum standards. In terms of library resources, infrastructure and services to ensure effective and efficient engineering education and research in India. Libraries play an important role in the collection, organization, presentation and dissemination of information to all users. Therefore, it is important to know what the information is. The need and importance of information is manifold. This is a unique resource, which has its own special characteristics. It is essential to our survival and has a life of its own. The importance of information is manifested in research and development, in business and industry, in planning and policy making and in management and decision making. Communication and information is an important factor, and especially in the light of the Right to Information Act. Information technology in the broad sense refers to "technologies used" in the field of information access & documentation.

IT has great potential to support the activities of research networks. However, some basic issues must first be addressed to determine whether technical support is absolutely necessary. Once that need is determined, simply installing a set of isolated, common information tools is not sufficient to address the full spectrum of network information needs. Therefore, there is a need for a comprehensive and customized network information system. It could be argued that a specification methodology could help structure the development of such an information system. In any library or information system, user study plays an important role in planning, designing and introducing new information services/products and assessing the quality of services and their utilities. Psychology of users, information seeking behavior, assessment of user needs and usefulness of information resources are variations of the aspects involved in user study. Information seeking behavior essentially refers to the strategies and actions taken to locate different elements of knowledge. It is concerned with the integrated use of three basic resources. Users, Information and Systems. Information seeking behavior includes the rationale for seeking information, the type of information being sought, and the manner and sources from which the required information is being sought. Information seeking

behavior is expressed in a variety of forms, from reading printed materials to conducting research and testing. Scholars, students, and faculty actively seek current information from a variety of electronic media available in libraries, with the frequency of Internet use increasing since 1995. Information seeking behavior is a loose term that includes a set of actions performed by a personality including expressing information needs, seeking information, evaluating and selecting information, and ultimately using this information to meet their information needs. To do to complete. Information seeking is a term that describes a person's needs, ways of evaluating, selecting, and using information. In order to obtain new information, the individual can interact with different people and use computer-based information systems. Especially in engineering colleges, libraries play a very important role in providing information related to academic, research and general aspects. These libraries provide various resources like books, magazines, back volumes, patents, standards, projects, theses, newspapers etc. Libraries facilitate access to these resources through print, digital and visual modes.

ENGINEERING EDUCATION

In India, engineering schools have been around since at least 1847. In that same year, Roorkee's Thomson College of Civil Engineering was founded. It would subsequently transform into the University of Roorkee (1949) and become the country's first engineering university. Country. Following this, in 1854, the still-standing Engineering College was founded in Pune. In 1856, the Howrah College of Civil Engineering was founded with the purpose of training engineers for the Public Works Department (PWD). This year (1864) saw the administration of the first degree test in civil engineering. Bengal Engineering College was its new name in 1921; in 1992, it was elevated to the rank of deemed university. The present-day Veermata Jijabai Technological Institute was founded in 1887 as the Victoria Jubilee Technological Institute in Mumbai. The formation of the National Council of Education (Calcutta) in 1908 following the nationalist uprising of 1905–06 was another watershed moment in engineering education's history. In its early years, it served as an engineering and technology institute; by 1919, it had transformed into what is now known as the College of Engineering and Technology. By 1955, the college had transformed into Jadavpur University, a unified institution that presently houses the Arts, Science, and Engineering and Technology Faculties, thanks to a State Act. In 1909, the Indian Institute of Science was founded in Bangalore. It was J.N. The generosity and vision of Tata are responsible for this. Postgraduate and research programs are its exclusive offerings. It gained the status of "deemed university" in 1958. Colleges of technology exist alongside engineering colleges; for example, prior to independence, there were institutions such as the College of Textile Technology in Serampore, West Bengal (1908), the Government Central Textile Institute in Kanpur (1914), the Harcourt Butler Technological Institute in Kanpur (1921), the University of Chemical Technology in Bombay (1934), which now has autonomous status, and the Lakshminarayan Institute of Technology (1942). Engineering and technical education did not receive much support till after independence. One of the most notable accomplishments since gaining independence is the growth of technical education. This growth was greatly influenced by the 1945 formation of the All India Council for Technical Education and the 1947 report of the Scientific Manpower Committee. Both the 1956 Committee on Engineering Personnel Report and the 1961 Report of the Committee on Post-Graduate Engineering Education and Research expressed support for technical education at the university level. There has been an unparalleled expansion of educational institutions in the past ten years. Between 1987 and 1996, the number of engineering graduates more than doubled, going from around 30,000 to 60,000. The number of people with a polytechnic diploma rose from 56,560 to 95,283 during the same time period. Technical Education in Independent India (1947-1997), written and published in 1999 by the All India Council for Technical Education, provides a thorough overview of the development of technical education in India since independence.

ENGINEERING COLLEGES LIBRARY

The library of the institute is the most important role of any institute. It facilitates teaching research and extension programmes. All students, faculty, researchers, administrative personnel and other campus communities depend on the library for their intellectual and information needs. Library of the Institute B.Tech., M.Tech. Degree programs. In various disciplines of technologies. The library of the institute had a collection of books, magazines, journals and newspapers. In addition, it has subscribed to various CD-ROM data bases and e-journals.

APPLICATION OF INFORMATION TECHNOLOGY IN ENGINEERING COLLEGE LIBRARIES

The field of library and information science is rapidly embracing the use of information technology (I.T.) for the purposes of information collecting, processing, and dissemination. It is being utilized by the Library and Information Center's IT Department. Infrastructure and services designed to cater to users' varied information requirements. Nevertheless, the utilization of these infrastructures and services is inadequate. International librarians have voiced their dismay at the absence of such facilities and services. The importance of information technology infrastructure in self-financing engineering college libraries has grown in recent years. Technology is being embraced by engineering college libraries that are self-sufficient. Infrastructure quickly. The conventional resources of independently funded engineering college libraries are being supplanted by an abundance of electronic resources, including electronic journals, databases

on CD-ROM, online databases, electronic books, web-based infrastructure, and many more. Results from N. Vijayasundara's research revealed challenges with IT implementation and offered solutions. In particular, the engineering research community in Uttar Pradesh was the focus of Chandrashekhar and Mulla's study of EIR usage trends. It seems like there is a trend toward more worldwide consistency in the research community, according to their findings. He explains why underdeveloped nations like India are squandering their access to digital information.

IMPACT OF INFORMATION TECHNOLOGY REVOLUTION ON SOCIETY

Changes in technology and new production machinery during the period of the Industrial Revolution brought into existence a new way of living. But the present revolution has deeply affected almost all walks of life and all aspects of human activity. It is bringing drastic changes in the way people live, work and even think. Its tidal waves advance on factories, industries, offices, banks, hospitals, schools, etc.; And its impact is mainly visible on organization and management, production, employment, skills etc. As a result, transformational changes are also taking place in the socio-economic structure of our society. Smith and Campbell (1982) appreciated the full power and reach of this transformation of society when they quoted the words of Professor William Gosling "We now find ourselves on the threshold of something much more significant and more far-reaching in its consequences." Nothing has probably happened to our race since our long-dead ancestors took fire into their service" (p. 137). Referring to the speed and extent of change, GE 11 (1981) has noted: "Information technology is fundamentally changing the society in which we live in a way that is unprecedented. Over time it is likely to affect the fundamental balance between economic, political and social values as it exists in our society" (Pages 98, 102) Cochrane (1995) believes that there is not a single aspect of our future that will remain untouched by the communications and computing revolution that is coming our way. Indian society as a result of Singhal and Rogers (1989) Describe and analyse recent social changes.

LIBRARY IN THE WORLD OF TECHNOLOGY

Libraries are central institutions in society that serve the public good regardless of their size and type. At a time when technology is profoundly reshaping entire economies and societies, it must also transform libraries. Foskett (1984, p. 7s) says, "The benefits of new technology really cannot be denied, and it would be foolish to try to keep it away from libraries". Being dynamic organizations that handle large amounts of information, most libraries are striving to adopt technologies in their daily operations and services. For example, even before the advent of computers, some libraries used Hollerith punch cards to store and sort circulation and acquisitions records (Kent et al., 1975). According to Pat Molholt (1987), "Libraries have a history spanning 25 centuries and have always embraced and even, more recently, leveraged technology" (p. 14). However, recent results. Advances in combining computing, microelectronics and communication technologies have made libraries more active and faster in the application of such new technologies in their activities.

COLLEGE LIBRARY

College libraries play an important role in higher education in India. Most of the undergraduate students, i.e. 88.5 percent, and postgraduate students, i.e. 53 percent, go to these colleges. When India gained independence many of the 533 affiliated colleges did not have their own libraries, but at present, every college in the country has a library. Most of the college libraries do not have proper facilities to meet the needs of their users. Their collections are not up to date, their budgets are very inadequate and limited, and a large number of them are single libraries. Many colleges neither have a library hall nor a room large enough, leave alone a separate building for the library. Any unused room, often out of sight, will be considered sufficient to hold a few shelves of books and in most college libraries there is complete darkness even during the day, for fear that the windows will be closed if the books are lost. Will disappear. Get stolen.

As various studies conducted by scholars have clearly established that the conditions of college libraries in India are not satisfactory. College libraries are open only six to eight hours a day. Many have no qualified librarians or staff and have only closed shelves. Several commissions and committees, including the Radhakrishnan Commission of 1948, did not emphasize the importance of college libraries in their reports. However, the University Grants Commission gives more importance to college libraries. Since the quality of higher education and research, especially at the graduate level, depends, among other things, on the standard of college libraries and their services.

The Radhakrishnan Commission (1948–49) expressed that "the library is the heart of the work of all universities, both directly, so far as its research work is concerned and indirectly, so far as its educational work is concerned, which derives its life from research." Scientific research requires a library as well as its laboratories, while a library is both a library and a laboratory for humanistic research. A first-class library is essential in a university. The growth of college libraries since independence is seen in connection with the vital importance of higher education and the role of libraries in educational development, the commitment to meet the demand of higher education and the initiatives taken by the Central Government. The UGC by an Act of Parliament (1948) recognized the value and importance of a well-equipped and organized library system and its role in higher education. Had found shortcomings and made several recommendations for improving the library facilities.

The Ranganathan Committee appointed by the UGC in 1957 made some excellent recommendations, which included standards for library construction, collection development, staff and services and furniture etc. These recommendations were accepted by the UGC and sent for implementation. Kothari Commission also made valuable recommendations for this purpose. (Sharma, O.P. 1964)

Chairman of the University Grants Commission, Dr. D.S. Kothari said, "Libraries play an important role in the development of higher education institutions. The University Grants Commission attaches great importance to the strengthening of library facilities in universities and colleges and their efficient administration. The Commission has also been giving grants to institutions for construction of library buildings for books and periodicals and appointment of library staff.

One of the most notable and recognizable developments in the history of higher education and libraries was the creation of INFLIBNET in 1991. Information and Library Network (INFLIBNET) Center is an autonomous inter-university center of the UGC of India. It is a major national program launched by the UGC in 1991 with its headquarters at Chhattisgarh University campus, Ahmedabad. Initially started as a project under IUCAA, it became Inflibnet in 1966. (Gupta, O.P. 1998)

To promote and establish communication facilities to improve capacity in information transfer and access that support scholarship, teaching research and academic pursuit through collaboration and partnership with related agencies. To avoid duplication of efforts, a computer communication network, INLIBNET: Information and Libraries, to connect libraries and information centers in universities, deemed universities, colleges, UGC Information Centres, Institutes of National Importance and Research & Development Institutes etc. Establishing a network.

USE OF IT IN LIBRARY

Library is the main information center which can utilize the rapid developments in IT for the benefit of the users as a whole. Librarian's IT priority should include all technologies that are expected to be used in library activities/operations and other library services for collection, processing, storage, retrieval and dissemination of recorded information, rapidly evolving information Technologies have entered almost every field. Applied including libraries. Information technology is used in libraries for library management, library automation, library networking, library audio-video transmission and technical communication of libraries.

Overview of Information Networks in India: The tremendous impact of computer and communication technology on society during the last decades has brought us into what is known as the Information Age. In this backdrop, libraries and information centers in India are going through a transitory phase. They are in the process of transformation and change from traditional manual system to automated system.(Patel, M.G. 2014)

Table 1 Use of information technology in libraries

Application of IT	Activities included
library management	Which includes classification, cataloguing indexing, database creation, database indexing etc.
library automation	The major areas of automation can be categorized into two organization of all library databases and all housekeeping operations of the library.
library networking	With a view to improving efficiency a group of libraries and information centers are interconnected following some common patterns of design for exchange and communication of information.
audio-video technology	This includes photography, microfilms, microfiche, audio and tape, printing, optical discs, etc.
technical communication	This includes technical writing, editing, publishing, DTP systems etc.

Table 2 Impact of Information Technology in Library

S.No.	information activities	traditional way	New technology
1	to produce, to originate	writing, typing	Word Processing, Text Editing, Character Recognition, Voice Recognition
2	preserve stock	Manuscript, paper-print media	Electronic publishing, magnetic storage, videotext, tele-text, computer disk, ROM
3	procedure	Classification, Cataloguing, Indexing	Electronic Data Processing, Artificial Intelligence/Expert Systems.
4	restoration	catalogues, indexes	Database Management System, Information Retrieval Offline, On-Line
5	disseminate/communicate	Lists, bibliographies, abstracts, hard copies	Electronic mail, electronic document delivery, computer conferencing

Library professionals in developed countries increase their level of knowledge about new information and communication technologies through workshops, seminars and library education and training programs. This helped them get maximum benefits from these innovations. Ultimately, their libraries became well equipped with hardware, software, Internet and other information access technologies and technology-based materials. It is well established that computers, printers and other hardware, software, and the Internet and other information and communication technologies have emerged as indispensable tools to assist librarians in serving their users.

Actually, information technology based services can be organized on the basis of three main parameters i.e. equipment and facilities, customer services and electronic sources which are shown in Table 3.

Table 3 Classification of IT based services

Equipment and Facilities	Customer Services	electronic services
Computer, OPAC, Union Catalog, CD-ROM, Scanner, RFID, Tele Text, Facsimile, Photocopy, Printing Technology, Barcode	Document Delivery Services, Interlibrary Loan, Indexing and Abstraction Services, Chat Services, CAS, SDI, Scanned Copies, Bulletin Board Services, Electronic Services and E-Resources, Digital Library	Audio-visual materials, Internet, library websites, databases

The ultimate goal of information technology is to improve the lives of those who use it by facilitating

more effective communication and better management of data. In supporting education, research, and development, information is an ever-evolving and limitless resource that affects every field and aspect of life. Most of the technological uses for libraries and information centers will revolve around collecting, managing, storing, and disseminating information or IT, given that these institutions deal mainly with information. The library and information science profession has been profoundly impacted by the technological revolution, particularly in the realm of computers and communications. Data can be more easily gathered, organized, processed, analyzed, presented, communicated, and disseminated with their help. It is anticipated that libraries would utilize a range of technologies to deliver information more rapidly and in larger numbers than previously, as indicated in Table 2.
Immediate and local access to a variety of library resources is a benefit of IT applied to information retrieval. Instantaneous access to early-appearing material and the provision of news and business services in electronic form are two ways in which technology has affected news services. The information service industry has also been profoundly affected by the rise of electronic material delivery, which has allowed for more personalized service options, more adaptability in the transfer of data, and the possibility of whole new service kinds. In the future, technological advancements will be crucial for the efficient transfer of information between libraries, library users, and librarians. This will greatly enhance the usefulness of libraries. Library automation and trained staff are crucial to the success of IT, but libraries' enthusiasm and commitment to embracing IT for all of their operations are the most critical factors. This is already underway. In 2002, Hewitson concluded

As seen in Table 2, libraries are operating in a dynamic environment where keeping up with technological developments is crucial to their ability to provide essential services. Modern libraries are hopeful about their use of IT to access the proper information when they need it, when they need it, and for what they can afford. In addition to reducing the workload for librarians, information technology helps raise library standards. The advent of cutting-edge IT has shattered geographical barriers, allowing for the development of more effective means of serving end customers. (Hanifa, Mohammed, 2006)

INFORMATION TECHNOLOGY IN INDIA

The Indian Statistical Institute, Calcutta (ISI) was the first institute to install the HEC -2M computer system in 1955. It adopted the Soviet-made URAL-1 in 1958. ISI also developed the first indigenous computer in 1964 in collaboration with Jadavpur. Calcutta University. During the period 1955–64, India installed 16 computers, of which 10 were from IBM, with 170 computer systems installed over the next eight years. Of these, 75 were supplied by IBM (Presser, 2004).

THE ROLE OF IT AS A CHANGE AGENT FOR LIBRARIES.

Raipur has long been known for its entrepreneurial spirit more than its capacity to produce highly skilled workers. This, however, is about to change drastically as the administration of Chhattisgarh has made it their aim to transform the state into a national education powerhouse. The target audience consists of international students as well as those from other states in the nation. At now, there are over 20 universities in Chhattisgarh. About 551,398 students are educated by Chhattisgarh's more than 900 higher education and research institutes.

Approximately 10,492 spots are available at the Master's level across a variety of fields. Despite Chhattisgarh's status as one of the fastest developing states and impressive industrial development, the state's university system has failed to turn out graduates with marketable skills.

In this day of advanced technology, the State Government Library Office has instituted a plan to digitize all public library services in an effort to provide the public with the most up-to-date library resources possible. State between 2001 and 2002. By 2010, both the State Central Reserve Library and the State Art and Cultural Library, in addition to twenty-six other district libraries, had fully automated their services.

With the goal of meeting the needs of readers in Chhattisgarh's public libraries, the 'SOUL' software has been chosen. An Indian government institute called INFLIBNET produced this software.
Academic library software is the name given to the "SOUL" program. Educational institutions are the original target audience for this program. Working together, the library's office and "INFLIBNET" modified this program to better suit the requirements of public libraries. Currently, every single library in Chhattisgarh is connected to 'SOUL' and operates on a computer system.

An IUC of University Grants Commission at Ahmedabad as a holistic solution for library automation and management. SOUL is designed using a client-server architecture, which provides additional strength to the storage capacity, and multiple access to a single database, different levels of security, backup and restore features, etc. This software was designed after extensive study related to various libraries. Works popular in university libraries. It has MS- SQL Server 6.5 RDMS as its backend. This user-friendly software is quite easy to use. The software consists of modules, viz. Acquisition, Listing and Movement, OPEC, Order Control and Administration.

CONCLUSION

The use of information technology has brought about a significant revolution in engineering college libraries. This not only helps students take

advantage of more excellent resources, but also provides them with a more stimulating and active educational experience. From this study we saw that the use of information technology is changing the museum feature of libraries, providing students with more resources for education. With this, the possibility of improvement in various educational processes increases. In the process, we hope to see more developments in this area in the future, which will help in making the educational experience of the students more perfect and enriching. Based on the results of this study, we recommend further strengthening of museum programs to promote the use of information technology and adopt innovative measures.

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