CHAPTER-1
INTRODUCTION

1.0 OVERVIEW

The political, social, economic and technological prowess of a nation is gauged by the access to information to its citizens, and capacity to store, explore and disseminate relevant information timely and pin-pointedly. Education is the axis of a nation's development. The countries advance not on account of their size or any influence but, the manner its people lead their lives. Our country has one of the largest educational networks in the world. The tremendous upsurge of education has been a characteristic feature of our national life since independence. Education and library are generally regarded as the two sides of the same coin. In fact, a library plays a vital role in the advancement of education, learning, scholarship, and research, and any scheme of education, formal or non-formal, conventional or non-conventional can't be implemented in the true sense of the term sans the help of a well organized library. As a result of it, librarianship is changing and expanding at a tremendous rate. Prior to it, information universe was Ptolemaic in its nature, libraries and institutions formed the center of the information universe. These trends were well reflected in the tools and techniques of librarianship of that period. After the Second World War, information universe began to change. Today it can be termed a Copernican universe. In this universe, libraries and information institutions have been relegated to the position of planets. The center of the Copernican universe is information. This signifies a radical change in the world view. And the changing trends of this universe are: incessant growth in the volume of world's knowledge, fragmentation of knowledge, increasing specialization, distribution of knowledge and information in a variety of printed formats and electronic channels, absence of stability in the production of knowledge, rapid conceptual changes, construction of ever increasing aids to retrieval and search, pattern of information flow from print media to electronic channels, etc.

1.1 TRENDS AND DEVELOPMENT

Analysis of the past history helps to assess the present situation. This in turn would take us on the right course to the bright future of any particular field of endeavor. Library and information science is no exception to this. The discipline with
its dynamic nature is in quest of new horizons world over including India. The Indian library world has recognized for long a continuous need to study Indian Librarianship and library science. No study of a discipline is complete without studying its historical developments. Thus, to understand the development of librarianship in India, it is necessary to take into account the history of libraries in India. We can take advantage of past experience and learn from the mistakes of others instead of repeating them.

No doubt, in the ancient time the graph of Indian education was at its zenith. Small wonder, the modern Indian universities have the roots in European institutions and models. For the earliest of which at Bologna, Paris and Oxford were founded as centers for traveling scholars. The present system of higher education in India has its origin in Elphinstone’s minutes of 1823, in Macaulay’s Minutes of 1834, and in Wood’s dispatch of 1854. Modern universities were established in India at Calcutta, Bombay and Madras, the three presidencies in 1857. At the time of the founding of the Inter-University Board of India in 1925, the number of universities had risen to 12, when India achieved independence in 1947; its share of universities was 18.

1.1.1 INFRASTRUCTURAL FACILITIES

Presently, all university libraries of developed nations are computerized; periodicals, journals and serials are available in digital media. Indian Universities are not in a position to upgrade the infrastructural facilities to follow the western pattern; there are more genuine reasons today than ever before why university libraries in India automate their services. The increased number of users, an increased in the amount of material being published, changes in the nature of reading materials (i.e. more use of CD-ROMs, e-journals, online resources of materials, etc.) development of user friendly computers, tremendous pressure of users for better, quality and pinpointed information service without loss of time etc. Manual methods are being replaced and Information Technology (IT) is being applied increasingly so as to promote access to information. Libraries are not operating in isolation now, but are Though nomenclature of both the librarians and library schools has changed, yet there is little change in curricula in the past 50 years. It is high time that the goals of library education be redefined. Library schools need to adapt to new technologies or they will lose their jurisdiction over information functions to professionals in the IT field. These technological changes have affected the survival of Schools of Library and Information Science. In US since 1978 till 2002, 16 library schools have officially
been closed. Therefore, the LIS Schools have to respond to the challenging situation and expand their teaching areas in the light of surging technologies.

Prior to our independence, a library in a university was usually established after its incorporation. It was because the university then was only an examine body with no teaching and research functions. There was as such no need for the university library. But in the due course of time, teaching and research came to be associated with the universities. Under the changed circumstances, the role of university libraries became paramount, intrinsic and academic in nature. As a result, number of university libraries is now in large and functional buildings with rich collections and adequate staff.

Now the role of a teacher has changed to that of a facilitator of knowledge, to guide students, from where and how they can get the sources of information. Education system is changing fast and only those institutions that changed themselves accordingly could survive. The role of the teacher has changed with the arrival of the internet. Moreover, the courses have to be market-oriented for students to get best placements.

The concept of dual degree, for instance Bachelor of Engineering-Master of Computer Science (BE-MCA) might be new in India, but these are quite popular abroad. The concept of dual degree, e.g. Library and Information Science-Bachelor of computer Applications (LIS-BCA) may also be initiated. The dual degree would help students to save the time lost in the process of applying and seeking admission etc. But in the beginning, the dual degree should be offered to only selected universities.

1.1.2 LIBRARY OBJECTIVES AND MARKETING

Exorbitant cost of Information Technology (IT) on one hand and decreasing library budgets on other have forced libraries to charge some price towards their services. The concept of marketing is relatively a new area to library information centers. The basic aim is to create the demand and interest among readers to use library resources and services. A number of libraries and information centers e.g. INSDOC AND DESIDOC have established marketing divisions to sell their information products and services on price to the users in print and electronic media. Pricing of library services and products has always been a controversial issue. But fee-based services do increase the productivity and economic efficiency of libraries.
Librarian now-a-days is considered as information specialist/information manager/freelance information officer, who serves beyond the four walls of his library to provide better services effectively to others in a highly specialized and technical information in to the pin-pointed and without loss of time. Thus marketing has become an instrument through which library objectives can be fulfilled.

1.1.3 SEEKING PROFESSIONAL SKILLS

To examine the special and professional skills required of a LIS scientist today, firstly he should possess document handling skills. These consist of technical skills of librarianship in the acquisition, classification, indexing, retrieval and delivery of documents and information. Secondly, he should have all the latest skills that are required in information handling. Information handling refers to extraction of relevant information from documents and databases and to repackage it and customize it to information needs of targeted groups in the form of products and services.

Communication technology has proved to be the most effective and competent instrument for leading a better standard of service in the libraries. Computer and telecommunication technologies play a pivotal role in providing and promoting communication among the libraries. Linking of computers with telecommunication has revolutionized the expansion of information systems and networks.

Library and Information Schools (LISS) have been continuously updating, revising and restructuring their course curricula, incorporating the current changes and developments. The Library and Information Science (LIS) education and training is no exception to it. The trends and development such as Web-based education, e-learning are striking a balance between conventional and technological based LIS programmed. Roles are also changing in the communication process. An author with word processor becomes compositor, with desktop publishing becomes a publisher, a library with a Online Public Access Catalogue (OPAC) on the internet becomes database producer and a host offering documents delivery on demand becomes a library etc. Moreover, two trends are clearly visible, one is in the direction of differentiation and the other one is towards integration. Differentiation is taking place in the west, especially in US, where information science is diverging from library science and on the other hand, the third world countries are trying to seek integration between library and information science. Consequently the contents of information are being increasingly added to library science. This has led to changes in nomenclature of the departments. Most of the departments are now known as the
departments of library and information science. There is a renewed trend towards courses in units or modules or packages. The emphasis is shifting from traditional to non-traditional interdisciplinary subjects. Changes are also taking place in methods of teaching and learning. Off-site education, is gaining momentum. With the financial crunch at its peak, self financial courses are fast coming up and certainly have an impact on the nature of the future courses. As the employers expectations are fast changing, so there is a need for employment-oriented courses. This integration is being fostered with the purpose to produce professionals with such a vision, technical expertise and managerial ability as they not only fit in libraries, but also in industry, governments, banks and business etc.

Education in any profession must respond to the needs of the profession. These changes may implement departure from the conventional courses offered by LIS schools. It is therefore, essential for LIS schools to give serious thought about not only integrating the application of computers, IT, communicating technologies, but the practical training is equally important. Moreover, to cope up with the challenges in librarianship, the professionals are facing a threat of market demand. It has become mandatory for LIS schools to design the structure of the LIS courses and curriculum at par with these demands. If change is the law of nature how can the LIS schools survive without changing their infrastructure, resources and manpower?

1.1.4 SYSTEMATIC INSTRUCTIONS AND PLANNING

The education for library and information science involves imparting of systematic instruction and training in LIS with a view to develop the manpower required to serve in different environments. The developments in the field of computers, communication, and networking have influenced the field of LIS. As a consequence of these developments the environments in which the libraries are operating has changed over the years. These changes have made the library schools to restructure courses to make their program more relevant, sustainable and thereby help in the development of professional manpower to meet the challenges of change.

The rapid changes in Information and Communication Technology (I&CT) necessitated corresponding shifts on the way knowledge is developed, acquired and presented. New technologies offer new opportunities to innovate on course content and teaching methods. The role of teacher is also changing from that of a tutor to facilitator. The I&CT is a collective term for various technologies involved in
processing and transmitting information. They include computing, telecommunication and microelectronics. Thus comprehensively IT can be defined as the use of hardware and software for efficient management of information. In short, the objective of IT is to provide better services to users. Keeping in view the growth of IT, could help in modernization in teaching, learning and research. As without the timely assimilation of the advance of technology, the LIS education and training would be left far behind in the development race. The ways of learning have been transformed by IT and are not restricted to the medium of print, bibliographies and abstracts. Teaching mostly concentrates on giving information, which is but one objective of education and other objectives are: developing reasoning and thinking power, decision-making, tolerance, risk taking capacity, and scientific temper etc.

The UNESCO Report, 'Learning, the treasure within', which has presented a global view of thinking on education scenario, improving the quality of education depends first on improving the recruitment, training social status and the ambience of the teachers. They need the appropriate knowledge and skills, personal characteristics, professional prospects if they are to meet the expectation placed upon them. With the coming of I & CT, the teachers are also to be geared up to adjust themselves. They should not only be aware about the topic of I T in the sphere of teaching and learning but also have to be conversant and well equipped in using this technology effectively. The I T has immense potential in harnessing the unmanageable growth of literature, has specially changed the structure of the LIS profession. Computers are evolving in to the present media and pose the most radical challenge to conventional formal education system. The WWW site, a fast repository of information or data and internet could enable the user to scan and download the documents in the areas of their interest shifting the focus from teaching directed learning to self motivated home-made learning. The teachers are to develop among their students an analytical mind, a quest for objective knowledge over and above their traditional role of guiding them through the syllabus. The application of new technology has brought in a significant social change, a shift in the profile of the working population towards information related jobs. According to an estimate more than 60 % of the workforce in the US and UK is engaged in the information sector only. It is crucial at this juncture, for the educationists and the educational planners to assess the growth in terms of changes brought about by technological forces.
1.1.5 EDUCATION AND EMPLOYMENT

Education cannot create employment; it can only create persons fit for employment, whereas career-oriented education renders it feasible. Since 1854, the Wood’s dispatch insisted on vocational education. Career orientation to education seems to be a top priority of the National Policy of Education of the eighties. Curriculum development must be more practical oriented in skill acquisition and expose the learner to working conditions outside the protected atmosphere.

The formal education system is today fast moving out of the four walled classroom and establishing itself in the digital world order. In this context, the teachers too have to redefine their role and encompassing in to their domain this new technology, commitment and a will to perform. The students should be encouraged to discover and understand fact by themselves rather than the teachers providing them with all relevant materials. Changes in the course curriculum are inevitable if learning process is to be made more interesting and relevant to the emerging scenario of the 21st century. Moreover, such changes would also help in removing the disparity among the curriculum followed by various universities and colleges in different parts of our country. Also in a World Trade Organization (WTO) controlled regime there is a real danger of the universities being swarmed by overseas institutions intent on earning a profit but not to concern about contributing to national development.

National Knowledge Commission Chairman Sam Pitroda says a lot of people of Indian origin in the US have achieved a lot and now want to give something back to India, 'but till now there was no as such quality institutional framework to execute their dream in to reality', he says. He mentions the Confederation of Indian Industries' newly set up Indian American Council as a platform for bringing Indian talent to participate in India's development in education, training, science, and research. And the services of the newly constituted Central Information Commission may also be engaged.

Some of the experts in our field of LIS are of the opinion that the working of computer shall be made as minimum criteria for admission in library schools. On the other hand, libraries and information centers have since long been acknowledged as an indispensable organization to nourish and nectar the academicians, specialists, scientists, research scholars, students and society at large.
1.1.6 COLLABORATION IN RESEARCH

Today a researcher from India can conduct research collaboration with his counterpart in other countries. These days, research is a team activity. The identification of research problem, planning and carrying out can be done by pooling the wisdom through the use of facilities available on the internet. The research data sharing, analysis and interpretation have improved to a great extent. Emphasizing the use of advanced technology in education without ascertaining its decentralization and distribution among the masses would only lead to disproportionate growth and further widen the gap between the known and not known.

There is no denying the fact that electronic based technologies will dominate the educational scenario in the 21st century. But the scope has to be created so that it can do maximum good for the maximum possible number of readers. Access to information will be the main criterion and not the size of the library. The role of the library is to convert data into information and then gradual conversion to knowledge and ultimately to innovation. Internet is asymmetric in the country as there is no exchange among the people. There is no internet connection in India, and so if one wishes to communicate with any part of the country, the route is through US. With the advent of digital library, the habit of visiting the libraries by students would certainly be affected. In the light of it, students should be assigned project works to ensure that they visit the libraries to collect details.

1.1.7 IN RESPONSE TO MULTIPLE SPECIALITIES

In the fast globalization, based on finite terrestrial space but infinite technological progress, the changed role of education has been universally recognized. Under severe fiscal crunch, the education sector is forced to restructure and reorient itself. The education has always played a reactive rather than a proactive role. The emergence of the ancient universities was contemporaneous to exploration, the medieval universities as an adjunct to Christianity, the Liberal universities anchored in the humanism of the nineteenth and early twentieth centuries was also a response to specific socio-political stimuli. Because of the diversity of the demands and multi specialties, we have today multiversity or technocratic university, private university, wall less classroom, and net varsity.

To examine the special and professional skills required of a LIS scientist today, firstly he should possess document handling skills. These consist of technical skills of librarianship in the acquisition, classification, indexing, retrieval and delivery
of documents and information. Secondly, he should have all the latest skills that are required in information handling. Information handling refers to extraction of relevant information from documents and databases and to repackage it and customize it to information needs of targeted groups in the form of products and services.

Communication technology has proved to be the most effective and competent instrument for leading a better standard of service in the libraries. Computer and telecommunication technologies play a pivotal role in providing and promoting communication among the libraries. Linking of computers with telecommunication has revolutionized the expansion of information systems and networks.

Under the new regime there have been shifts in focus from student to knowledge and from process to product. What is required is not just updating or upgrading knowledge in any specialized area but also skill and re-skill for shifting specialization from one discipline to another according to the changing needs. The accent should be on problem context rather than on disciplinary structures and the skills required locally should be applicable globally. The present obsession with excellence should be done away with. We should not let excellence kill awareness and sensitivity. Pursuit of excellence may be good, but not its possession. In fact, 'the constant fracturing of knowledge' is academically unproductive.

Actually we are living in an information desert as far as our professional information is concerned. We librarians are supposed to provide answers to the queries of our valued users. When it comes to our own profession, we prefer to draw blank. For instance, how many Libraries and information centers do we have? How many LIS professionals are being trained every year? How many students are pursuing their research for PhD? How many library associations are working in India, and what is their address? How many LIS journals are publishing, and who publish them out? Do we have readymade and up to date sources to answer these queries without wasting time? As to registered medical practitioners, engineers, scientists, etc., there are sources that can provide the answer. So for as the LIS profession is concerned, there is no source as such.

With the founding of the Berlin University in 1810, Wilhelm Von Humboldt introduced the concept of a research university. In India, however, research in the university lacks substance, largely because of financial splurging. Our administrators and policy makers have to realize that new ideas can be best generated in the universities, where there is a continuous inflow of talented fresh minds. After all the
green revolution, which freed India from the specter of famine, was born in the agricultural universities. There is an urgent need for the centre of research activity to move back from the national laboratories to the universities. Developed countries like Germany and France provide free higher education and a host of other countries provide means for financing the higher education. There is no reason why India can't do so. There is no denying the fact that the society, i.e. industry and business has the primary responsibility to contribute funds in a large measure, for it reaps the benefit. But it is for the government to provide the environment.

1.1.8 RANGANATHAN'S REMINISCENCES

The conclusion may be drawn by quoting the apt words of Dr. Ranganathan, in his radio talk in April 1956: “An account of the libraries in the first four periods (the Vedic, the Buddhist, the Medieval, and the Muslim) must necessarily depend upon the historical research. This has yet not been done. The library profession is too small in India to spare a person to fill up this antiquarian gap. Those trained in the scientific method of tracing history are too preoccupied with dynastic and political history to spare sufficient time for cultural history in general and library history in particular. Sir Jadunath Sarkar, a historian and historiographer per se, was one of those few who could be considered as exceptions to the above”.

The Indian sub-continent is in the process of transition from tradition to modernity. The ancient co-exists with the modern and the post modern. There is an innate urge to plan for a hopeful and prosperous future. It is in this larger context, reforms in LIS education and training assume great significance.

1.2 STATEMENT OF THE PROBLEM

The Library Schools carry an important responsibility to prepare professional manpower for the present and future needs of the country. They should not direct their energies exclusively to traditional and current practices and needs. They must, in addition, play a role of innovator by proposing new developments, investigating the old, re-examining the accepted, experimenting with untried and in sum serve as leaders in the field.

To meet the requirements of manpower the library schools are expected to play a dual role, (i) to provide training of a type and at a level so as to meet the existing requirements of the library and information infrastructure, and (ii) to provide necessary orientation and specialization which can be useful to develop the infrastructure on modern lines during the foreseeable future. This aspect gains all the
more significance because of factors such as prodigious and continuous growth in knowledge and information, changing needs of the users, continuous developments in IT, and new developments in information services in developed nations.

The problems in the library profession and in the schools imparting the education are manifold. The progress of Library and Information Science Education and Training in India is better in comparison with the other developing nations, but for behind the develop nations. This necessitates a thorough rethinking and restructuring of LIS education and training. The speed and enormity of change that we experience today places a responsibility on us to make suitable changes. As the demand of Higher Education is increasing, consequently the demand for library services has steadily increased. The enlightened policy followed by the UGC under the leadership of Dr. C.D. Deshmukh was a significant factor that helped the growth of library education in this country. As the frontiers of knowledge expand, updating and restructuring are to follow suit to enhance the quality and standards of education.

The schools of librarianship and Information Studies are not playing the role as expected. The professional education courses have not kept pace with the fast changing potential environment. Review of status of LIS education is on the anvil since last two decades throughout the world and persistent efforts are made for the development of education and research in LIS globally. But no concrete headway has been made so far. Without the pillars of infrastructure it is not possible to stand, sustain, and survive for both the LIS education and information technology. The Curriculum Development Committee (CDC) 1992 of UGC reported that lacunae exist in several out of 85 Library and Information Science Schools surveyed.

The problems of teaching Information Technology (IT) in Library and Information Science Schools (LISS) may be grouped into problem regarding Curriculum, Lack of proper infrastructure, and Lack of uniformity in the level as well in Programs. Teaching IT, Teacher Training, Resource Sharing and Networking, Inadequate Faculty, cost barriers etc.

As the boundaries between Library Science and Information Science are becoming more and more overlapped and blurred, it is not easy to determine which aspects of IT are to be included in the curriculum and which aspects of Library Science to dispense with. The indiscriminate inclusion of IT in the syllabus will result in over loading it.
In 1987, International Federation of Library Association and Institutions (IFLA) have urged the harmonization of LIS education programs. For instance the degree awarded by the Indian Universities differs from one another and there is no uniformity in the syllabus as well. The major lacuna is lack of a central accrediting body which is an ever burning and unresolved issue in India.

Teacher Training (TT) continues to evade the attention in relation to the changing technologies. The TT lacks quality, substance, and practical direction. Until and unless the teacher of LIS schools is well trained, the manpower can't be expected to work along with the modern library management.

Placement is the biggest problem the LIS students face today. Absence of teaching of changing technologies in LIS courses is one of the leading drawbacks. More attention needs to be paid towards manpower policies. Even the postgraduate two-year integrated semester system could not be successfully introduced in the absence of IT related infrastructure.

Above all, shrinking budgets, problems in self generating resources, variety of technological tools and systems, sophisticated needs of the users are also some of the problems affecting the whole system. Need for sustainable library information and services, lack of rapport between the department of LIS and the University main Library, level of coordination amongst Departments of LIS of various Universities and mutual cooperation between Department of LIS and Allied Departments in the University and absence of information processing laboratories for need-based and practice oriented training would also be taken up in the study. On entering the field the products have to crystallize the concepts learnt in the classrooms, computer laboratories and libraries.

The revision of library and information science curriculum is a major issue of great concern today. The library Schools in the developed countries have been receiving the curriculum so frequently in order to meet the rapid changes taking place in the information world. But such a revision of the curriculum of the library schools in India has not been done frequently in order to meet the rapid changes taking place in the information world. Such a situation creates a lot of mismatching between the manpower generated from the library schools and the actual manpower requirements in Library and Information Centers. An attempt is made in the study to examine how for the existing curriculum in Library schools and the actual manpower requirements in Library and Information Centers. An attempt is made kin the study to
examine how far the existing curriculum in Library Schools respond to the new changes taking place in the field of IT and in generating need-based manpower requirements in libraries and information centers in India.

Education for Library and Information is comparatively new as compared to other subjects that emerged in the 20th century. It provides both training and systematic instructions in librarianship. Also the LIS training program is designed keeping in view different kinds of libraries and different types of users. The developments in the field of computer, communication technology, publication has greatly influenced LIS education and accordingly LIS Departments have restructured their curriculum to make their teaching programs more relevant. There is no national Library Council in the country but, State level Library Councils could be established on the line of Kerala, which even earned the UNESCO award for literacy work in 1975. Lack of comprehensive plan for improving teaching and learning; effective teaching results not just from the efforts of talented teachers but from a comprehensive plan. NAAC is undertaking institutional evaluation, but is unable to specify the quality of teaching and research in individual departments.

The new Economic Policy, launched in the early 90s, is based on a regime of liberalization. The situation has been compounded by the resource crisis. And the government is unwillingly to provide outlays commensurate with the increasing needs and that it should fend for itself and Higher Education has become a peripheral sector. It would therefore, be necessary to work out alternative strategies to meet the crisis. The Government may also keep a strict vigil over the private bodies so that they may not indulge in activities prejudicial to the larger interests of education. It is almost imperative that curriculum should be made responsive to the needs of the society, which presently does not seem to take care of.

There has always been a wide gap between the Plan and the action. Funds alone can not help to improve the quality of education. It needs imperative of all including that of teachers, students, administrators and others. Lack of a system to know ‘Who is who’ and what is being done by the LIS departments in the country. This not only encourages competition spirit among the institutions to perform better but also let others to know the quality of educational institutions existing at any given time in India. Lack of national / international consortium in education, training, and research by sharing cost. Many of the LIS departments are not having adequate faculty. Low priority attach by the Government to the profession. Lack of
technological skills among library professionals to extract the relevant data and information from the documents and databases. Lack of new paradigm in LIS education which is characterized by new syllabi, new approaches and methods, to teaching and matching infrastructure. Lack of innovations in teaching methods. In short, there is no uniformity in any department of the LIS education and training, such as, Levels of LIS education, admission requirements, curriculum, faculty strength, admission requirements, Updating and redesigning the curriculum etc.

Today we see most of our university Library Departments have no uniformity in any area of their activities. Lack of close coordination is absent, whether it is between the LIS Department and the Main Library, or among the intra-departments. The process of automation of the University libraries has been completed almost by the grants of INFLIBNET, and the process of automation of the LIS Department is also taking place but, the departments are facing the problem of appointing a full-time computer teacher. For the present, stand-by arrangements are being made, which is not the ultimate solution. Now all the departments are facing new challenges in information handling. The detailed studies of all the university departments require a lot of time and yeoman's efforts. The pattern of all the University Departments is almost similar as well as the conditions of Indian Universities are comparable, the result of the study may not very different. As such, even a small sample regarding Indian LIS Departments of the Universities was satisfactory.

The researcher has made an attempt to study the infrastructural facilities available in the University Departments, Admission process, Level of courses, Type of LIS Program, Faculty strength, Teaching methods, Teaching tools, Application to information technology, Evaluation methods, departmental libraries, Computer laboratories, Cooperation between the Department and the Main Library, administrative set up, Budgets, Grants etc.

1.3 OBJECTIVES OF THE STUDY

The study has been designed and carried out with the view to achieve the following objectives:

- To study the changing horizons, past and present of Library and Information Science Profession;
- To undertake in depth study of the organizational pattern of university departments of Library and Information Science and their infrastructural facilities, Admission Procedure, Two-year Integrated Course or The
Traditional Course, Teaching methods, Curriculum Development Policies, Teacher Training Programs, Teaching Aids, Placement Cells, etc.

To meet the requirements of manpower, the library schools are expected to play a dual role i.e. to provide training to meet the existing requirements and to provide necessary specialization for foreseeable future.

To study the level of coordination and cooperation between the Department and the Main Library; Department and the Allied Departments; Department and other LIS departments in the country.

To help formulate effective planning and mutual cooperation amongst departments of Library and Information Science and Libraries

1.4 HYPOTHESIS

In the light of the objectives discussed and reviewed of the existing literature, the following hypotheses were formulated to guide the present investigation;

H1 Departments of Library and Information Science are not fully equipped to integrate I T in the curriculum;

H2 Two-year Integrated LIS course meets the objectives of the best possible educational training in the present scenario;

H3 Most of the LIS schools are facing the problem of inadequate IT-trained teachers.

H4 Coordination and Cooperation between the Department and the main Library, with other departments of LIS, and with the allied departments of the university, will help in designing curricular and conducting manpower studies;

H5 Most of the Departments are facing the problem of inadequate finance.

1.5 SCOPE OF THE STUDY

The scope of the present study is confined to four University Library and Information Science Departments. Therefore, the researcher has limited the study to Kurukshetra University (KU), Kurukshetra; Panjabi University (Pbi.Uni.), Patiala; Guru Nanak Dev University (GNDU), Amritsar; and Panjab University (PU), Chandigarh

1.6 RESEARCH METHODOLOGY

The study in hand is primarily a survey of Library and Information Science in general and comparison of University Departments of Library and Information Science in Particular. For this purpose information was gathered regarding
establishment of the University and the Library Science Department, Commencement of the first Library Science Course, Level of courses, Type of the Program, Admission procedure, Number of seats in the courses, Provision of the NRI seats, Departmental Infrastructure, IT related facilities, Faculty strength, Teacher Student ratio, Curriculum Development, Departmental Library, Computer Laboratory, Media Room, Seminary, Organization of seminars, workshops etc., Teacher Training Program, Teaching Methods, Study tours, Apprenticeship program, Institutional Membership of National/International Library Associations, Rotation System in faculty hierarchy, Administrative staff, cooperation among Departments of LIS of different universities in the country, Allotment of university budget, Financial grants from UGC/NFLIBNET etc., Organization of Consortium, Future Plans, Policies and Programs etc. In this respect, the researcher personally visited the university departments and libraries and met the faculty members and LIS students and collected the data. To gather the necessary data, two methods were adopted, namely questionnaires and interview. For the collection of data three questionnaires were designed—one for faculty, two for professionals and third for students. A structured questionnaire with multiple choices and open-ended questions, designed according to the objectives, was personally delivered to each university faculty members, Professionals and the Students for collecting general information regarding the questions as given above. Interview and observation methods were also applied when required for authentic and detailed information.

1.7 METHODS OF DATA COLLECTION

In the present study, the use of both the primary and secondary sources has been made to collect the data.

PRIMARY SOURCE

The primary data for the purpose of present study were collected from four universities, namely Panjab University, Chandigarh; Kurukshetra University, Kurukshetra; Panjabi University, Patiala, Guru Nanak Dev University, Amritsar. Three questionnaires were designed, one for faculty, two for professionals and the third for students to collect the data.

SECONDARY SOURCE

The Secondary data for the said study were obtained from the published books, journals of library and information science, magazines, newspapers, periodicals, seminars and conference proceedings, annual reports of university
libraries, Information and Library Network (INFLIBNET) reports, official records of university libraries, Reports of various committees and commissions, research papers etc.

1.8 CHARACTERISTICS OF THE SAMPLE

From the above mentioned universities, the questionnaires have been divided in to three categories, namely faculty, professionals and the students constitute the sample of this study.

Table 1: Sample Size (Year 2004-2005)

<table>
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<tr>
<th>Respondents</th>
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<th>Pbi.Uni,</th>
<th>GNDU</th>
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<td>37</td>
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<tr>
<td>Total</td>
<td>98</td>
<td>122</td>
<td>94</td>
<td>60</td>
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The sum total of all the three categories of the sample came out to be e.g. 98+122+94+60=374. The researcher has personally contacted to each and every respondent so as to get clear picture of respondents' view.

1.9 ANALYSIS AND INTERPRETATION OF DATA

Keeping in view the objectives of the study, the data collected through the questionnaires was analyzed and interpreted with the help of statistical tabulation methods using average and simple percentage approach. The data have been presented, compared and analyzed by using tables.

1.10 OUTLINE OF CHAPTERS

The present study has been divided into seven chapters:

Chapter 1 Provides an introduction. This chapter contains statement of the problem, objectives of the study, hypothesis, scope of study, research methodology, outlines of chapters used for the present study and the review of literature.

Chapter 2 In this chapter entitled “Changing Horizons of Library and Information science Education and Training”, an attempt has been made to trace the history and development of library and information science education and training in general and in India in particular.

Chapter 3 This chapter entitled “Impact of Information Technology on Library and Information Science” deals with Education and Training in general and Library and
Information Science Education and Training in Particular" throws light on the role of IT which revolutionized the modes and methods of information storage and retrieval.

Chapter 4 This chapter entitled "Role of UGC in Programming Library and Information Science Education and Training in India" describes that in the field of librarianship and library and information science education and training, UGC has a very useful contribution. This chapter dealt with various committees and commissions and their recommendations for the revision of LIS curriculum, provision of departmental infrastructural facilities, computer laboratories, departmental libraries, etc.

Chapter 5 This chapter entitled "Manpower Needs and Manpower Policies and Program in Librarianship" focuses on the manpower or human resource which is the sum total of knowledge, abilities ad skills the workforce possess and the quality of work they are capable of carrying out. This chapter will study the emergence of information profession, the changing role of librarian and information professionals.

Chapter 6 This chapter is a survey of infrastructural facilities and LIS teaching and training programs, etc. of departments of LIS of Panjab University, Chandigarh, Kurukshetra University, Kurukshetra, Panjabi University, Patiala, and Guru Nanak Dev University, Amritsar.

This chapter is based on a survey of the department of LIS of the above mentioned universities to assess their infrastructural facilities, curriculum development policies, teaching aids, teaching programs, placement cells etc.

Chapter 7 this chapter entitled "Conclusion and Suggestions" deals with conclusion based on data analysis and recommendations made to bring LIS education at par with the developed nations. Finally, it offers suggestions for future research.

1.11 REVIEW OF LITERATURE

History reveals that man learns from the past. Man has always sought help and guidance from the history. Similarly, the review of literature unfolds the intricacies to promote greater understanding of the problems and ensures the avoidance of unnecessary duplication. It also provides comparative data on the basis of which to evaluate and interpret the significance of one's research topic. The study of the related literature implies location, reading and evaluation reports of research as well as reports of the casual observation and opinion that are related to the planned research project. In any worthwhile study, the researcher must have an adequate knowledge with the work that has already been done in the area of his
The search for literature should be conducted in a systematic way to achieve optimum results.

The investigator searched the available literature for the purpose of the present study and visited university libraries and a few other libraries in Panjab, Haryana, Chandigarh, Delhi and Himachal Pradesh. The researcher has not come across much valuable literature related to library and information science education and training in relation to the library and information science departments of these universities, in the form of general infrastructure like origin of the departments, levels of programs, types of courses i.e. integrated course or pass course, infrastructure facilities regarding information technology, admission process, students strength, faculty, Coordination between the department and the main library; mutual cooperation among intra-university departments, contacts between or among the other university departments in the region, tie-up with industrial houses, departmental libraries and their services, Computer lab/workshop and services and teaching, Institutional membership of inland or overseas library associations, Method of teaching, Teacher training, Departmental activities such as holding of seminars. Workshops etc., Placement cell, Seminary in the department, Administrative staff, Students’ evaluation and evaluation of teachers by the students, apprenticeship programs, University grants, UGC/INFLIBNET grants, Organization of Consortium in the form of books, dissertation etc.

However, some seminar papers and conference proceedings of various Library Science Associations had been published which could throw light on some parts of the present study. After this exercise, it was observed that work on the performance of library and information science departments in the universities in India has not been done much, and not even in the developed countries.

Danton (1949) discusses in his book titled “Education for Librarianship”, the role of library schools. Unless library schools in some measure assume a role of leadership, it can hardly expect more than maintenance of the status-quo and a static condition of librarianship. If progress and achievements are to be measured, they will come to a considerable degree from leadership exercised by the schools, which must then be at least a step ahead of libraries for which they prepare the staff members.

Ranganathan (1954) refers in his article titled “Training in Library Science”, the role of apprenticeship. Outside the portals of classrooms, the role of apprenticeship is highly rewarding. He highlights the importance of apprenticeship and felt that the
exposure would certainly help in understanding the actual problems which hardly come across otherwise.

UGC Review Commission (1964) recovers that the teacher training could be provided by anyone university within the state in batches and the number of teachers in each batch is expected to be as low as 3 to 5. Once all the teachers get such training the program could be discontinued till it is necessary to restart/reactivate.

Neelamegham (1966) reports that it is imperative a study project for manpower planning is taken up by an appropriate body. The study should encompass a wide range of facets: in-depth assessment of the existing set-up for education and training for library, estimation of manpower in terms of types, quality and quantity for the next 10 years, professional education and training for operation, supervision, management, design and development of information systems and services, continuing educational programs and workshops for all categories to attract young talent, placement programs, fundamental and applied research in information science, etc. The objective would be to build up a cadre of information scientists.


Shera (1972) sums up in his book titled “Foundations of Education for Librarianship”, the two-fold objectives of Library Education Schools are to provide the best possible professional education to students; to advance the practice of librarianship through program of research and developmental activities.

Issac (1976) in his article titled “Library Education in India: An Overview” expresses that the automation in libraries is going to follow sooner or later. Having established sound IT infrastructure after surmounting initial inhibitions, the automated services will get its normal way. Moreover, the discipline of LIS is to play a leadership role for other disciplines to follow suit.

Srivastava, C.P. (1980) keeps posted in his book “University Libraries in India”, which is considered nearly an authentic work on university libraries in India.

Heilprin (1980) over 25 years ago spoke at the annual conference of the Maryland Library Association on the long-term survival of libraries and library schools.

Heilprin uses ideas from the theory of evolution to frame his presentation and conclude, “The library community (libraries and library schools) is a system that appears insufficiently equipped to compete adaptively over the long term”. According to Heilprin, two things are necessary for survival over the long-term. In order to attain
control over its own destiny the library community must keep its own members up to date educationally, and beyond this, it perform the research that alone creates and keeps leadership in its fields.

When he made that speech in 1979, Heilprin gave the library community approximately 20 years to make those changes in the library. Since Heilprin's speech and community has survived. But no one could argue that building the knowledge base through research has been a key factor in that survival. Looking to the future, however, it seems that Heilprin's ideas are even more relevant than they were in 1979. After all research is an essential component for survival.


**Chopra, H.R. (1984)** reveals in his Ph.D thesis titled “Librarianship as a Profession: A Study of Socio-Economic Background and Professional Orientation of Librarians in Delhi” discusses the study of librarianship as a profession in India. On the basis of the results of this study, the author concludes that “Librarianship is a fast developing profession in India”

**Kumar, P.S.G (1985)** categorically categorizes his article “Doctoral Research in Librarianship in India” that till 1980s, Indian Ph.D Degrees versus foreign Ph.D Degrees, among the 16 doctorates in Library Science, five got their degrees from abroad and the remaining eleven from various Indian Universities.

**FACETS OF DOCTORAL RESEARCH TILL THE 1980s**

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<tr>
<td><strong>INDIA</strong></td>
<td>11</td>
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<tr>
<td><strong>CANADA</strong></td>
<td>1</td>
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<tr>
<td><strong>USA</strong></td>
<td>4</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>16</td>
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Area of research in Library Science: out of 16, six were devoted to Classification and three were on the topic of Management and rest of the seven was on different topics.

**Rajan, T.N. (1985)** rallies support to his article titled “Man power Needs for Information Work”, that the supply of manpower to our libraries, documentation and information centers is coming from library schools and the INSDOC and the DRTC.
The products of the universities are largely absorbed by the academic institutions. The INSDOC/DRTC trainees go to R & D institutions. But the products turned out do not measure up to the quality of service needed. The library schools give to take a major share of responsibility. Barring a few progressive ones, the faculty members get opportunities to expose themselves to the new horizons. The environment and atmosphere are hardly conducive to develop a more progressive approach.

The librarians, documentalists and information scientists constitute only one segment of the manpower, computer specialists, system analysts including database managers and operators, and subject specialists with skill in consolidation and repackaging of information, other fairly large and strategic segments. And subject specialists operating at mission –oriented information centers, capsule information collected from a variety of sources for specific use.

In the developed countries, a group of experts generally known as 'Gatekeepers' have been identified in R & D institutions, industries, etc. There is such all-rounder of knowledge in India too. They have to be carefully identified to bring them into the main stream.

Mangla, P.B. (1985) apprises of in his article “Library and Information Science education in India”, that the first one-year Post-Graduate Diploma Course in Library Science, which served as a model for developing library science programs was established at the initiative of Dr. Ranganathan at the University of Madras as early as 1937. Only five Universities were conducting the PG Diploma Course till 1955 and six more departments were established between 1956 and 1959 and by the end of 1960s, 18 more departments were established, raising the strength to 40 at the university level.

And as per the UGC Panel on Library and Information Science, a library school conducting B.LIB Sc. Course should have a minimum of one Professor, one Reader and three Lectures and a library school conducting both Bachelor/Master's degree courses, should have one Professor, two Readers and five Lecturers. Library schools enrolling for PhD Programs would calculate additional staff on the interdisciplinary nature of the research etc. It has been suggested by the UGC that the Teacher Student ratio may be 1:10 for the bachelor's level course and 1:5 for the Master's level course.

Vyasa (1985) succinctly stresses upon the need of the systematic application of films to education was introduced in India as early as 1911-12 by Maharaja Sayajirao
Gaekwad. The Free Public Library Scheme of Baroda started its visual education branch in 1911-12. Along with exhibiting picture postcards, and magic lantern slides to school children, it held film shows throughout the state. It was only in 1937, that the imperial government of the British India made conscious efforts in the direction of AV education.

Kumar, P.S.G. (1985) recollects in his article titled "Doctoral Research in Librarianship in India", that the first library school of the world at Columbia College, founded in 1887 by Melvil Devey, was aimed at creating a cadre of librarians trained in the respective routines of librarianship. The trend continued for almost 50 years. It was only in the second quarter of the 20th century that systematic research had gained ground in the field and lifted librarianship to the level of a science.


Gunjal, S.R. (1987) says in his article titled "Growth of Libraries vis-a-vis manpower in Karnataka State" that the next to US, India has the largest number of LIS schools in the world and delineates the aims and objectives of LIS education and the need of innovation in teaching methods and problems of teaching IT in LIS schools.

Vija (1987) analyzes in his dissertation titled "Oral history as an information source, a descriptive study" that how oral history evolves in 14 North American Programs. And how collections of oral history interviews are created, processed, disseminated and maintained for use. The findings indicate a need for increased emphasis on education users, librarians and architects about unique properties of research sources label 'oral history'.

Jak Yung (1988) examines in his dissertation an exploratory "study of academic librarian's attitudes towards computer technology and their relationship to library science education".

A total of 244 librarians working in academic libraries in universities or colleges in US are surveyed. Out of the 195 responses (79.9 % response rate), 190 are useable for data analysis. The respondents were mostly females over 40 years old had a MLISc degree and had more than 10 years of library experience. In addition, most of them are using computers at work.

The result reveals that over all the librarians should have positive attitude towards computers. It is found that most of the demographic variables including
gender age, the highest degree obtained, collection size, functional areas in which librarians were engaged in the current library and length of library experience, were not significantly related to their attitudes towards computers. Experience in the computer and the knowledge of a programming language are significantly related to a positive attitude towards computers.

An Arline (1989) reviews acquisition, the process by which libraries order, claim and receive material, is an essential part of the library school curriculum. Since 1930s, training in this area has diminished. The significant findings are acquisition librarians believe that most of their education for acquisition should come from on the job training followed by library school training, workshops and conferences, under interaction and other sources, including professional readings. The findings demonstrate that library school curriculum should contain more about acquisition, with particular reference to specific areas, but the primary training in the workplace for acquisition work should continue to occur.

Philip (1989) presents the quality of LIS School's MLS program in US in terms of having a doctoral program and the size and age of its MLS program.

Young Ai (1989) distinguishes in his article titled "library education in Japan, Republic of South Korea and Taiwan: A Comparative Study". The hypothesis tries to verify (i) Japan, S. Korea and Taiwan have shared a similar culture background and have adopted the same American educational system for libraries, if the three countries share similarities in library education, they will also have similar trends, problems and future prospects resulting from the similarities. The hypothesis have been verified through comparing such variables as the objective of library education, teaching staff, students, curriculum, text books, research facilities etc.

Eat Abadi (1990) explores the genesis of library. According to him, International School of Information Studies (ISIS) is the acronym coined by him for the new International School of Information Studies housed in the new Bibliotheca Alexandria (BA) in Alexandria, Egypt, which opened in November 2002, under the UNESCO program, "decade of Culture".

Gordon (1990) finds the difference exist between students who participate in library research skills instruction as a separate class and students who are taught these skills integrated into subject matter curriculum. The findings reveal that the students in the integrated classes are able to locate information without help and those in the...
separate classes need a little help. It recommends that the full time staff and integrated library instruction certainly improve access to library resources.

Julie and Tallman (1992) reveal the perception of international student, on the LIS programs in US shows the perception of international student. The research questions are tested and show that the language is the significant concern for of them.

Ellis and Mood (1992) say that all UK library schools include some instruction in online searching and CD-ROM use in their curriculum.

Varalakshmi (1992) outlines in her article titled "Emerging Trends in IT and its Impact on Library Environment", the changes in information activities and the growth of IT. The author explores the new avenues in technological developments and their impact on the activities and services of library information systems and their repercussion on the changing dimensions of LIS education and training.

Freeman (1993) in his article titled "education and training for library and information services in the UK " calls upon the continuing professional development in LIS have to face the revolutionary changes and those schools unwilling to adopt, may consequently fall by the wayside.

Kaula, P.N. (1993) narrates in his article titled "Rethinking on the Pattern of Education for Information Management", focuses upon the pattern of education needed for information management, caused by the impact of IT. And examine the trends in developing countries and the steps taken in India to meet the challenges.

Johnson (1994) enlightens in his article titled "Education and Training in Arab States", the education and training in Arab states. There are approximately 33 LIS schools. In 1993, with support from UNESCO, IFLA, and the British Council, a meeting was held in Rabat on the working document 'Education of Information Specialists in the Arab Region' and the participants contributed papers concerning the situation in their countries.

ALGERIA: Various levels of professional education exist. There is large number of students, but job opportunities are substantial.

BAHRAIN: The main problem is a shortage of qualified personnel.

EGYPT: The first professional training commenced in 1944 with the Post-Graduate Course. Now the professional education is commonly undertaken through three or four-year undergraduate program. Masters and doctoral programs were created in the early 1960s.
JORDAN: In addition to the PG Course in the University of Jordan. Sixteen of the thirty community colleges teach a two-year diploma program.

KUWAIT: In 1988 a department in the university was planned to be an interdisciplinary program, two years of librarianship and information studies with the stress on teachers' training program.

LIBYA: Professional education is mainly at the university level, but there are also specialized courses in secondary schools.

MOROCCO: Two courses are offered leading to qualifications as 'informative' or as 'informative specialize' courses have been regularly revised since 1974. Most students are staff members of the government departments.

OMAN: A department of librarianship and information studies was established in the Sultan Qaboos University in 1986-87. There are five staff members and so far fifty graduates.

SAUDI ARABIA: The emerging national/information network in Saudi Arabia now includes over 1,000 schools. In 1973, university level courses were initiated. Each university has a focus on a particular theme. One university offers bachelor's and Master's programs for woman only, with student contact with male instructors via close circuit TV. 15% of the Saudi University students are foreigners, and all receive Saudi government scholarships.

TUNISIA: The University of Tunis created the Institute of Documentation in 1981. There is no shortage of jobs, and indeed a very rapid growth has been achieved since 1987 to meet the needs of an emerging job market.

Discussion focused on the problems to be overcome. The absence of specialized Arabic language, LIS publications and lack of dissemination of published documents are problem. In the Arab world there are 12 journals of LIS, but there is still a need for regional library journals. Admission to students is not sufficiently selective. Increasing student number is a serious issue, e.g. for internship and for job opportunities. There is a shortage of personnel with the qualifications and experience required for teaching. At the conclusion of the meeting, it was agreed to establish an Arabic Association for libraries and information science education.

Aina (1994) explains in his article “Librarianship as a Profession in Africa”. The findings reveal that LIS education in Africa can be favorably compared with their counterparts elsewhere. Today there are 19 library/information science schools in English speaking Africa. In a finding, eight of the 19 institutions surveyed are in
Nigeria. 79 (84 %) of the respondents are male, while only 16 % are females. This is in context to the developed nations, especially Britain and the US, where there are more female librarians than male librarians. In addition, 40 % of the training institutions are located in Nigeria.

Many library and information science schools in Africa are serving to make computer technology a strong component of their curricula. Continuing education programs in the form of workshops and training courses needed. Moreover, one finds that the UK and US still have a tremendous influence on the profession as most of the respondents (63 %) were trained in either of these two countries.

**Lynch, B.P.** (1994) Dean and Professor, Graduate School of LIS, University of California, Los Angeles summarizes in his article titled “Final Report to Indo-US Subcommission on Education and Culture” that the work supported by Indo-US SubCommission on education and culture on the project to investigate the development and culture on the project to investigate the development and application of university library standards in India. After visiting university libraries in Delhi, Bangalore, Calcutta, Madras, Bombay, and Chandigarh, Lynch says that the library profession in India is lively and up-to-date in its knowledge but it lacks in development and technical standards. While on the other hand, many countries have had the benefit of the leadership of the National Library in establishing technical norms, the National Library of India is not providing leadership in these areas.

**Cornish, G.R.** (1994) states in his article titled “Training Opportunities for Inter-Library Loan Purposes”, that Universal Availability of Publication (UAP), a concept the International Federation of Library Associations and Institutions (IFLA) has been fostering for over the last two decades, but with little success. In the light of decreasing budgets, increasing technologies and rising user expectations. Research has shown that very few libraries have a separate budget for inter-library loan.

**Yusuf** (1995) focuses on his article “Survey of Library and Information Science Schools in India in Relation to Geographical Distribution” says that creating something like Nalanda database, prepared by Indian Library Association (ILA) under the project from National Institute of Social Sciences and Technology (NISSAT) is the need of the hour, but should develop many more libraries than about 10,000 libraries included in it.
Notes and News (Herald of Library Science) (1996) Sahib Singh Verma, a former librarian, but then the Education and Development Minister of Delhi (later on the Chief Minister of Delhi and also the Union Cabinet Minister to hold the portfolio of Union Labor Minister) advised and motivated the library fraternity that Dr. S.R. Ranganathan's birthday be celebrated as the 'Library Day' in India. He initiated Prof. P.N. Kaula and his team to organize the first Library Day on 12 August, 1996 at Delhi.

Basu and Sarkhel (1996) sum up on the Curriculum Development Committee (CDC) 1990 recommendations of the Panel of LiSc. Prof P.N. Kaula, Chairman of the Committee recommend the uniform pattern of LiSc education in the country which in turn may facilitate the mobility of students from one region to other. The CDC has suggested for minimum number of teaching post for a department running only BLISc. Course or both BLISc and MLISc courses, but the report was silent about the departments running of M.Phil course. Post for the computer applications, more A/V technologies in teachings, appointment of part-time guest teachers, inter-departmental cooperation also appears to be effective in the recommendations. In all it touch upon the orientation program for teachers, teaching methods, e.g., it is imperative to have minimum teaching staff (1:5) teacher student ratio and infrastructural facilities for the LIS department, examination reforms and modular Curriculum an alternative e.g. rather than functioning as some kind of Master Plan for a curriculum. The modular curriculum can be used as the basis from which a department may design its own curriculum in the light of local preference, needs and resources.

Vijayasudha, V. and Sastry, R.S. (1996) makes a sleek statement, quoting 'Evans' that human relations in a library is as such 'working through people and with people'

University News (October, 1997) refers "An Analysis of Doctoral Thesis" accepted by Indian Universities during 1993-97, out of the 21 broad topics; no research was done on LIS education.

IATLIS (1997) national seminar on "50 Years of Library & Information Science Education in India" produced a glimpse of the various facets of LIS education during the last 50 years.

Kalam, Abdul APJ and Rajan, Y.S. (1998) say that any organization, society, institution, a nation without a vision is like a ship cursing on high seas without any aim or direction. It is clarity of natural vision which constantly drive the people towards a goal.
Baradol and Kumbal (1998) examine the inter-disciplinary nature of Lib.Sc. The study reveals the subject of Lib.Sc. has relation with 29 other subjects like telecommunication technology, computer technology, information storage technology have relation with it from practical point of view. The remaining subjects have relation with it by way of providing theoretical bases to it or by utilizing the services and products of it for their advancement.

Mitra (1998) explains that the function of university, namely service and consultancy has always remained weak in India, despite many university-industry linkages programs.

Saxena and Srivastava (1998) evaluate the leading library software packages available in India. Some of the important library software packages such as Granthalaya, Libsys, Sanjay, Suchika, Basic Plus, Tech Lib Plus, etc. have been evaluated. Parameters selected for evaluation of software packages include facilities provided in the software packages, hardware requirements, operating system platforms, language of software development, search facilities, etc.

Vohra, R. (1998) refers in her article titled "Reorienting Library and Information Science Education in India that periodic review of syllabus is to be regularly carried out in the face of changing information and communication technologies. It will not only make the LIS education and training up to date but, will also meets the market demands by way of producing technical-oriented products.

Rao, Annapurna, Babu and Biswas (1998) evaluate the trends in IT to say that many libraries and information centers all over the world are facing the dilemma of striking a balance between the print media and new electronic media. An experiment run in the US during 1991-95 under the code name, The University of Licensing Program (TULIP) and core project based on the Cornell University, US provides insight into the issue and facilitates the resolution of the dilemma.

An experiment involving many of the parameters like generation and publication of information in computer accessible form, its communication to users, hardware, and software issues involving user preferences etc. that influence the shape of things to come were conducted. The focus was to test networked delivery of journals to users desktop and extend of their usage. Another study with similar objectives, though specific to the field of chemistry is the CORE (Chemical Online Retrieval Experiment).
Balakrishnan (1999) in his key note address in CALIBER-99, inaugurated by Prof. Yash Pal, reveals an amazing characteristic of the internet is that besides being people-close, it allows a quick and up-to-date exchange of ideas and information. A greater understanding about IT can only be achieved in academic environment than in technological environment. We may get too enthusiastic about technological developments and forget to look at real things. It is imperative for students of colleges and universities, because educational institutions determined the culture of the people. Premier institutions the so-called ‘hot-house’ places do not represent mass people.

With change in search operations and enhancement of computer technology, the concept of storage has completely changed where the libraries have to focus. The challenge of the present digital library is to store information, have suitable software, maximum use of A/V aids and produce knowledge, in addition to books and journals.

Internet is asymmetric in the country as there is no exchange among the people. There is no internet connection in India, and so if one wishes to communicate with any part of the country, the route is through US.

Mangla, P.B. (1998) mentions in his article “Library and Information science education: trends and issues”, the demands of the new information environment on LIS systems are not only diverse and complex, but rising also. This requires a new breed of LIS professionals. Education of LIS professionals will continue to be adapted to changing technological, social, economic, and educational circumstances. The need of the time is not to dispense with the components of the new IT. This is because there will always be need for libraries to collect, catalogue and indeed materials of purely local interest.

Vashisth and Mishra (1998) say in their article titled “Design Framework for Need-based Courses in Library and Information Science”, that after the lectures has been delivered it is necessary to take the feedback from the learners.

And also attempts to discuss an operational framework for designing need-based competence oriented innovative programs for professional education and training of LIS professionals.

Singh (1998) discusses in his article ‘Library and Information Sciences in India’ in the Encyclopedia of Library and Information Sciences. He briefly goes through the developments taken place in LIS education and training in India. “It was a historic
moment for the LIS literature when the first professional periodical, 'Library Journal' came into existence. It is the sole contribution of well known library doyen, Melvil Dewey, which is fitted with traditional, modern and virtual arena of librarianship. His first foundation of LIS periodical, first library education school, and spectacular work on organization of knowledge in libraries, promoted the publication of literature throughout the world.

Tadasad and Maheswarappa (1998) discuss in their article "Education for Librarianship in India: How to make It More Sustainable?" trace briefly the LIS education in India. The authors examine the social, demographic, economic, political, educational and technological changes in the country and identify the issues to be considered to make the LIS profession more relevant and sustainable.


ILA (1998) national seminar on "Sustainable Library and Information Services" stressed the need of strengthening the library services in the fast changing information scenario.

Westbrook and Lynn (1999) study from 1974 to 1996 indicates a gradual rise in the number of courses in the US, in the areas of bibliographic instruction, information literacy and user education.

Dvarstyne and Barlow (1999) conduct a study of the University of Maryland College of Library and Information Services (CLIS) of MLIS program is based on a multi-disciplinary approach and in 1992 a total curriculum review revealed the first stage focused on the core curriculum, second on electronic courses in IT and the third on administration and management courses and the archives and records.

A cursory examination of nearly all the curricula of LIS schools in US reveals a relatively extensive use of internship experiences, where the students use both the codified knowledge and algorithmic skills necessary to current practice. Although interest in providing LIS distance learning (DL) programs is growing, there is little research on their impact on students and faculty.

Small, R. (1999) conveys in his article titled "A Comparison of the Resident and Distance Learning Experience in library and Information science Graduate Education", that the part time residents and regulars at the Syracuse University, US using a questionnaire focus group and structured interviews. Results indicate the
residence students find more difficulty than distance students to balance academic responsibilities. Faculty finds that the distance teaching requires more time, ongoing training and technical support.

Distance Higher Education in US has developed from the correspondence models using electronic technologies (Video, Audio, Text, and Graphics) to create new distributed electronic learning environment.

Karisiddappa, C.R. (1999) says in his article titled “Education and Training for Internet Use”, that the main objective of the curriculum is to make the education more meaningful to the needs and aspiration of its beneficiaries as well as to make it socially relevant. Any change in the curriculum should be gradual and steady. At the same time new developments in the field should be ignored for want of infrastructure facilities. It is rightly stated that the internet is the ‘Heartland Technology’ of the early 21st century.

Singh (1999) predicts in her article titled “CD ROMs: Improving The Usage In Libraries” that over the next decade the librarians will encounter the twin challenge of managing the print collection, while simultaneously developing policies, tools and support for digital collections.

Khan (2000) presents in his article “Virtual Libraries: Real or Virtual” that virtual library is an amalgamation of three basic things vise: computer network, telecommunication media and reading material in electronic format. And the foremost need is to build the Virtual Library (VL) infrastructure. For, it is to build a foundation of IT which will facilitate users to electronic information, without requiring the help of an expert. For a user-friendly library, software and hardware are required.

Ojha, Dave, and Sharma (2000) review in their article titled “Impact of Information Technology on Libraries: A Futuristic Approach”, that the application of information technology during the last decade of the 20th century visualizes that library in the 21st century will be known as paperless or electronic libraries. Paper will be replaced by CDs, and other forms of non-book material. Internet will be another important medium for restructuring and marketing of information. The libraries may not require having huge buildings, but they may be available at readers’ desks, WWW, Video Conferencing, desktop media in the 21st century. Various IT gadgets likely to affect the library and information activities have also been discussed.
Vij (2000) provides in his article "Library And Information Science Abstracts on CD-ROM: A Bibliometric Study", a brief sketch of LISA database on CD-ROM- a single disc accommodating the entire database from 1969 to 2000 covering 550 journals with over 206,091 abstracts and its coverage of journals from the developing countries is relatively poor. By the year 2000, only 24 Indian journals are covered and this figure varies from year to year. The coverage of Indian periodicals and papers is only 4.5 % of the total journals and concludes that there is a room for improvement in the coverage of Indian journals in LISA database.

Biika (2000) provides in his article titled "Library and Information Science Education in Meghalaya", the growth and development of library science education in Meghalaya in general, and the role of the department of LIS in particular. The department was approved by the UGC in the year 1985 and it became functional in 1986. The school runs a four semester integrated course leading to the degree of Master of library and Information Science. However, the provision also exists for those who are not in a position to complete the four semester, such students can opt for two semester course leading to the BLIs. degree. Now hardly any student opts for this provision. Every year 25 students are admitted. Three students have been awarded Ph.D. The faculty comprises one Professor, one Reader, and two readers.

LIS education in Meghalaya is at par with that of other states in the country. It has also been observed that many students seem to have a poor image of LIS course. They join with the mistaken belief that it is easy compared to other subjects once realize that it is not so, they prefer to leave, this is the reason for dropping out and also very unfortunate as deserving students are deprived of the opportunity to join the department.

Tadasad and Maheswarappa (2000) highlights in their article titled "Library and Information Science Education in Indian Languages: Some Issues", that the role of institutions in LIS education and also the LIS education in India, with regard to the level of courses, medium of instructions, library infrastructure, job opportunities, and employees expectations, attitudes, skills and knowledge required by LIS professionals and course requirements, identifies and disseminates the issues such as the availability of expertise, curriculum, availability of course materials, background of students, marketability of LIS graduates and post graduates, national integrity, trends in LIS education at national and international level, global village concept and their implementations, LIS education in Indian regional languages.
Conclude that imparting of LIS education in regional languages may impede the very philosophy of library and Information Science. The ideal in this respect would be single international language-English and surely not many regional languages.

Marco (2000) discusses in his article titled "The Third World Libraries", the librarian training and professional opportunities in Bangladesh. The Department of LIS at Dhaka University has 14 professors; four of the faculty has PhD. The University started the one year PG Diploma Course in 1959. Started as a Master's degree program in 1962 and a two-year Master's program in 1979. The current syllabus at Dhaka University has a conspicuous lack of computer applications.

Library funds come from the government and special grants come from donor countries. Fee structure is minimal. Both the United States Information Service (USIS) and the British Council (BC) have provided visiting scholars and training courses. By 1992, a second library science program at Rajshahi University was started as a one-year PG Diploma Course followed by honors.

IATLIS (2001) national seminar on "Changing Dimensions of LIS Education", describes the LIS education is in a state of transformation in its course contents, techniques, methods and tools.

Singh and Krishna (2001) discuss the Ph.D research programs in LIS carried out in different universities in India during 1995-99, have been analyzed to find out the nature and direction of research, areas of research receiving more attention or less attention, future trends, etc.

The data collected from University News, ILA Newsletter and IASLIC Newsletter, scanning the issues of the years 1995-1999 has been classified, grouped and analyzed to find out the various indicators of the study. For the study, analyzing of 150 research activities has been carried out.

**YEAR WISE DISTRIBUTION OF LIS THESIS**

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The research topics that received more than four submissions during the study period have been analyzed as follows: ‘User Studies and Satisfaction is the most popular area of research among LIS professionals. In all, there had been 28 submissions in various universities.

On ‘Library Education’ only four theses on this topic submitted during the study period e.g. one in 1995; One in 1996, Nil in 1997, One in 1998, and one in 1999 which discussed a range of issues like curriculum development, continuing education for LIS teachers, LIS courses through open Universities, attitude of graduate level learning, etc.

Singh (2001) observes that although teachers have gradually enjoyed certain esteem everywhere, this has not happened in India to a desirable extent.

Reddy (2001) explores that universities in developing countries can not always reciprocate with resources that are similar to those of the established universities in the developed world. This often leads to an attitude of disinterest on the part of the latter. However, efforts can be made to circumvent this problem if certain areas of collaborative endeavor can be identified in the developing nations. For instance, India has a vast field of potential resources that can be gainfully exploited.

Nigavekar (2002) lectures on the topic “Higher Education in 10th Five Year Plan: Philosophy and Approach”, that the LIS departments have to research on their agenda at a priority level. The 10th Plan must send clear signals in this respect to go in for higher magnitude of funding in an organized manner for supporting research at an individual level and at also departmental level. We need to develop Research Council, with built in functional autonomy. Inter-University Centers like INFLIBNET have proved useful institutions for young researchers. There is need to pursue quality to enhance overall academic ambience across the entire fabric of LIS education.

Dabas and Singh (2002) analyze in their article titled “Organizational Culture and Leadership Styles in Some Selected University libraries” the empirical data on organization culture and leadership styles practiced in university libraries of Punjab, Haryana, and Chandigarh. It is rightly said that if Total Quality Management (TQM) is a strategy then quality or working life is the strategic architecture. Leadership has an intimate relationship with quality of work life. The major defect of the scientific management is to give more importance to management than employees for all
purposes. This keeps the employees away from the basic responsibility for the quality of the work.

Sen (2002) defines in his article “Fuzzy Approach and the Search Engines” the efficiency of Google, Hotbot, and Alta Vista search engines. The Google located the largest number of sites in all cases, However, Hotbot performed better than Google and Altavista in respect if relevancy. Moreover, Hotbot has been able to retrieve sites only related terms with 70 % efficiency which the other two could not.

Vohra and Sharma (2002) review in their article titled “Integration of Information Technology in LIS Education”, that current technological advancements justify for strengthening the LIS profession as a whole in the light of catering to the changing needs of the users and the increasing growth of information. This can be achieved by connecting all universities. In the developed countries the concept of virtual libraries is fast coming up.

Pandey and Chakraborty (2002) present in their article “Role of Information Technology In Higher Education In The 21st Century”, that there is no denying the fact electronic based technologies will dominate the educational scenario in the 21st century. The countries which would harness the power the power of multimedia communication for education and training purposes will be the economic powers of the present century.

Power (2002) discusses in his article titled “Online Education: The Quality Imperative of Over Hundred Years”, starting with the Chautanga continue educational program, initiated by the University of Chicago in the 1890s, has made use of varied technologies. He also cites an example of the Massachusetts Institute of Technology (MIT) which will put all the courses on the internet for free. For this MIT to spend about $100 million in 10 years.

IATLIS (2002) national seminar on digital information systems and services called upon to adopt digital formats in an era of fast developing changing technologies.

Gosai (2003) laments in his article titled “Institutionalization of quality Culture through NAAC: Some Theoretical Implications that over and above the increasing number of fake universities are playing havoc with the quality of education. Hopefully, a bill is likely to be introduced into the LOK Sabha (L S) for conferring more powers on the UGC and relevantly re-christening the University Education Commission of India. For the present, one might look at NAAC with cautious optimism.
Ramaraj (2003) compares in his article titled "Feasibility of Introducing National Service in Distance Education" that Distance Education (DE) is as good as Conventional Education (CE), for the unit cost of DE is 35 times lesser than that of CE. Quality wise it is as good, while being more cost-effective. Further, the twin aims of basic education for all and higher education for the maximum and character development are equally important for a society to progress. The NPE, 1986 realized the importance of readjustments in the curriculum in order to make education a forceful tool for the cultivation of moral and social values.

Since the public is in the bare need of the services of the educated, and the working class is demanding opportunities for further studies, similar readjustments in the curriculum of DE will go a long way in fulfilling the twin objectives cited above.

Pillai (2003) states in his "Editorial" in the NAAC News that all over the world an appreciable number of graduates are churning out by the higher education institutions, the market prefer only those who have practical application of knowledge, capability on innovation, confidence, willingness to update their knowledge and information, an urge to outshine others in the job, accept individual responsibilities, and have above all, a global vision of life. Quality culture is crucial to such accomplishments.

Gosai (2003) explains in his article "Institutionalization of Quality Culture Through NAAC: Some Theoretical Implications" views that in view of the massification of higher education, the teaching staff of majority of higher education is engaged in the transmission and dissemination of obsolescent and antiquated knowledge, leave alone the generating of knowledge and setting up of new goals and objectives to cope up with the emerging challenges. They are less interested in the curriculum design, initiation and redesign of the courses in the changing scenario.

Most of the teachers are not exposed to the latest trends in education including the pedagogical aspects, minor/major research projects are hardly undertaken, and if ever undertaken, hardly accomplished. Though they attend orientation and research courses and have no practical applications of the training and skills imparted to them in such courses. As a result, they never venture to go off the beaten track in their teaching, not to mention testing.

Hence students are not found to be demanding. For want of information and guidance they go for lopsided vertical progress instead of horizontal progress. In brief, education in these institutions is divorced from societal needs and relevance.
and employability, formal guidance, concept ability, extension work and societal service, are the ingredients yet to be introduce into the system.

**Sharma, S.K., pandey** (2004) says in his speech on the occasion of 49th annual conference of ILS “Responding to users’ need in changing information landscapes, that in the knowledge society, information is very potential and powerful tool.

**Karisiddappa,C.R.** (2004) briefs in his speech on the occasion of 49th annual conference of ILA “Responding to User’s Need in Changing Information Landscapes: sojourn in libraries from Palm leaf to Palm top”, that it is necessary to take stock of the past events and to mind them for the future promotional development. And emerging technologies allow communities to think together. The future therefore belongs not to information but to the active process of collective cognition in communities.

**Srivastava** (2005) evolves in her article titled “What Exactly is Portals, Vortals and Information Gateway?” a number of models for information systems which are being experimented by libraries to serve up the internet-based content like Portals, Vortals, and Information Gateways.

Computing Dictionary defines a Portal as “A web site that aims to be an entry point to the WWW, typically offering search engine and/or links to useful pages, and possibly news or other services.” These services are usually provided for free in the hope that users will visit it often. Library Portals are searchable and provide users convenient access to a comprehensive collection of resources. Vortal is a word-creation, made from vertical and Portal. A Vertical Portal is defined as “a web search engine that locates very precisely a few web pages of particular interest as per the subject entered as the search topic”. Sometimes called a Vortal, is a web site that provides a gateway or portal to information related to a particular industry such as health care etc. Gateways is described as a range of internet sites and are services on WWW here resources are selected according to their quality of content, catalogued and classified. Information Gateways are more intensive, the abstract or descriptions given are of far better quality as compared to automatically extracted parts of web-pages extracted by search engines.

**Nandi and Panigrahi** (2005) describes and defines in their article titled “Library Services in the Dot Com Era : Its Protection Against Cyber Crimes that in the digital era, libraries and information centers are slowly becoming store house of digital information, Of late, internet services are used for betterment of library services.
Emergence of internet has originated the concept of cyber crime. The article discusses the concept of cyber crime with an intention to develop awareness among library professionals.

It also deals with cyber laws, Indian and worldwide efforts to combat cyber crimes. The Information Technology Act 2000 is enacted to prevent cyber crimes. A number of preventive measures to discharge effective information services are illustrated in the light of this Act.

Sachdeva, S.K. (2006) dwells upon the Right to Information (RTI) Act passed by the Lok Sabha on May 11, 2005. The Bill with 146 amendments benefits the citizens of all section to access the information barring some sensitive topics like defense, security etc. Even the noting of government file comes under the purview of this Act.

Pillai, V.N.R. (2006) urges the Ministry of Human Resource Development (MHRD) to allocate 1.5 per cent of the Gross Domestic Product (GDP) for higher education in the coming financial year i.e. 2006-07. Prof. V.N.R. Pillai, Vice Chairman of the UGC said that currently only 0.4 percent is being allocated.

Sachdeva, S.K. (2006) conveys the new vistas on distance education is opened up recently when the President of India Mr. A.P.J. Abdul Kalam inaugurated the first interactive network on Education Satellite (EDUSAT) that could widen its reach by promoting the self-learning method by laying emphasis on the question and answer methodologies. It would also utilize digital library facilities.

Besides, I have also consulted the following material:

Library and Information Science: A Case Study Conducted at The School of Information Sciences, University of Pittsburgh (Pennsylvania, Moral Development)