CHAPTER – 2
LITERATURE STUDY

STUDIES DONE IN THE AREA OF RESEARCH

Many studies have been carried on in India and abroad to assess the LIS education in general and LIS curriculum in particular and to suggest changes in LIS education to meet changing requirements. Some selected studies on different aspects of LIS education and LIS curriculum carried on in India and abroad are summarized hereunder. The research studies and the papers published in journals and proceedings have been covered to have a clear understanding of the trends and issues concerned with the needs of revising and updating curriculum in the 21st Century, inclusion of IT components in the LIS curriculum, changing needs of library users and their expectations, IT infrastructure needed in the LIS departments, competency and training requirements of LIS faculty, problems and prospects of LIS education. The summary of the studies conducted in these areas have been presented in the literature survey.

2.1 Information Technology in LIS Curriculum

Stueart-R-D (1993)\(^1\) discusses ways in which information access, as a key concept in library and information science education, can be enhanced by new information technologies and ways in which these developments impact curricula, recruitment of faculty with particular expertise, and the placement of graduates.

Malinconico S (1992)\(^2\) observes that the most common projections of libraries of the future assume that the new technologies and services will be controlled and managed by individuals identifiable as librarians. There is an equally plausible scenario, in which there may be competition between librarians and others for control of information resources and services. It is imperative that
library education prepares for an environment, in which librarians will need to work with other groups interested in delivering information services to end users. In addition to bibliographic and technical competencies, librarians will need communication and problem solving skills, and an understanding of management issues, which are not generally stressed in library and information science curricula.

According to Hsieh-Yee. I (1997) the proliferation of electronic information resources and the intense user interest in searching them have made it essential for librarians to possess the knowledge and skills to access electronic resources. To understand how educators have prepared students to deal with these resources, a survey was conducted of teachers specializing in reference services, advanced reference services, or online retrieval. The study, which asked the teachers how they covered online and CD-ROM resources, found that most educators appreciate these resources and favour integrating them into the library and information science curriculum. Electronic resources have been integrated into the basic and advanced reference courses in which educators emphasize the contents of resources rather than searching skills. Online and CD-ROM resources have been covered in depth, the amount of hands on practice has increased, and educators showed considerable agreement in their coverage of subtopics related to these resources.

Murthy S.S (1997) covers information technology covers areas which can be grouped into 2 broad disciplines: computers and communications, including the development and management of information systems like libraries, databases and networks (both online and offline); and reprography and mass communication, covering the technologies used for presentation and dissemination of information. Author briefly discusses the impact and use of all these technologies on library and information science education, with a focus on developments in India.
According to Malwad N.M (1982) the aim and objectives of library and information science education in the light of recent developments in the field of communications technology. He describes machine to machine communication and the basic concepts in computer communication networks. Also states that communications technology will play a greater role in information handling due to developments such as reduction in computing cost, advent of terminals, increase in on-line interactive systems, capabilities of resource-sharing, economical storage capacities of files on videodiscs, use of television as a ready-made information screen and telecommunication and satellite communication facilities. Finally suggests the inclusion of recent technological innovations in library and information science syllabi in India.

According to Minishi-Majanja, Mabel K (2003) Information and communication technologies (ICTs) have become basic ingredients of, and competitive tools in the information-intensive tertiary/higher education sector. Their increased and specialised use in teaching and learning, research, academic administration, institutional management and information provision translates into greater access to higher education, flexible and innovative delivery at reduced educational costs, more efficient provision of information services and enhanced educational outcomes. In Library and Information Science (LIS) education, ICTs can represent both the content of courses and essential tools for effective learning of the content. The constant rapid development of these technologies means that LIS curriculum structures and content have to be reorganised, infusing greater ICT knowledge and skills into courses and providing more hands-on practice. African LIS educators recognise the importance of intensifying information technology courses in their curricula to be relevant, visible and competitive in an increasingly globalised and networked world. However, they are often challenged by factors such as technological capacity, funding and attainability of resources, human expertise and the attitudes of trainers/trainees, higher education bureaucracy and a complicated employment market. Collaborative initiatives and approaches in
the implementation of ICT projects are particularly significant because networking, which is the backbone for effective harnessing of ICTs, often transcends departmental, institutional and national jurisdictions.

An overview of the Library and Information Science (LIS) education in Croatia is provided. Horvat, Aleksandra (2000) has argued that the changes brought about by the new information and communication technology have a great impact on LIS education that requires more than habitual updating of the curriculum content practiced up to the present. Apart from a number of new topics that have to be introduced into the curriculum, the form of the delivery of the content has to be changed. Modular form of delivery of LIS educational topics has become common and its adoption is related to the influence of technology that usually approaches the problems one-by-one as separate issues. Modularity is contrasted with the traditional academic teaching that assumes accumulated expert knowledge of the faculty.

According to Sturges, P (1999) Schools of library and information science are facing the challenge of identifying what is distinctive about the library and information science (LIS) curriculum and can be used both to strengthen LIS education and ensure that it is attractive to students who are not future librarians. Also suggests that the chief barrier is the notion that they are exclusively concerned with collections. In response, contemporary LIS education focuses strongly on access to information, whilst tending to deemphasize collection related matters. Without diminishing the importance of this shift, it is possible to demonstrate further the distinctiveness of the LIS curriculum by placing a strong emphasis on the information content of documents and electronic information resources. Author identifies six existing areas of LIS curriculum providing an ideal bridge between the old and new professions: content; re-intermediation between the user and technology; negotiating ethical and regulatory difficulties; designing user oriented services;
managing knowledge resources; and creating value added information packages.

He, S (1999) to discover the actual changes in library information science (LIS) in the USA since 1971, looks at information technology (IT) oriented courses taught at 4 LIS schools: at the Universities of California (Berkeley), Iowa, Louisiana, and Tennessee, during 6 selected academic years between the period 1971-1995. Author presents the findings of 2 analyzes: a macro analysis investigation of frequency, distribution and changing ratio of IT oriented courses, and a microanalysis which examined LIS curricula topics and whether any consensus exists among the 4 schools. Also discusses the impact of such IT oriented courses on LIS curricula development in LIS education in general.

According to Connaway, L.S (1997) the theory versus practical issue in library and information science education in general and in cataloguing education in particular has long been debated. Decreasing budgets, dependence on technology, the availability of bibliographic utilities, and the outsourcing of cataloguing may contribute to the debate and concern associated with cataloguing education. A new library and information services programme at University College of the University of Denver was designed to incorporate the research and scholarly thought and the practice of the library and information science discipline with other related disciplines. The cataloguing component developed for the programme utilizes active learning techniques supplemented by a theoretical core.

Virkus, Sirje (2008) his purpose of this study is to describe the experiences of the Institute of Information Studies of Tallinn University in introducing ICT, including Web 2.0 technologies, in library and information science education, and to explore the role that these can play in new models of learning and teaching. Web 2.0 applications are reviewed in this study and the role that these can play in new models of learning and teaching. The introduction of new
technologies into library and information science (LIS) education is examined through a case study at the Tallinn University. Author finds Web 2.0 is influencing the way in which people learn access information and communicate with one another. The Institute of Information Studies of Tallinn University has a long history in using ICT in its teaching and learning. Experiences with open and distance learning and e-learning have transformed teaching and learning, provided new alternative delivery modes, and helped to reach new target groups. Recently the staffs have been experimenting with Web 2.0 technologies and a few have successfully adopted them in teaching and learning. The author suggests that in order to be successful in our modern society LIS educators should take advantage of new ICT and consider the learning preferences of digital natives as well as digital immigrants. Web 2.0 supports constructivist approaches to learning and has great potential to socialise online learning to a greater extent than we have previously seen. Web 2.0 technologies should be implemented taking into account pedagogical perspectives. Finally the author supports the idea that integration of information and communication technologies, including Web 2.0 technologies, into LIS education is an important challenge for LIS educators.

Amba, S (1998)\(^6\) discusses the ergonomic aspects of information technology, with a focus on library and information workers and users. Author considers the introduction of the subject in LIS education and training, highlighting aspects that library and information professionals need to be made aware of, such as the computer and its peripherals, lighting, furniture and layout of work areas. Also looks at some possible modules to accommodate ergonomic studies in the LIS curriculum, either as part of library management or in courses on library automation, and emphasizes the need for such courses in India.

According to Kumar, Krishan & Sharma, Jaideep (2007)\(^5\) LIS School need to strive hard for their successful existence for which they require to give serious thoughts and do necessary changes in their LIS curriculum especially
incorporating adequate ICT components. ICT has made a big impact on teaching and learning, leading to a multi format learning environment. Keeping in view the impact, the present study discusses the need for e-learning centered education for LIS professionals and throws light on some of the e-learning centered education models for LIS Education.

**Madalli, D.P (1999)**

presented a paper at CALIBER 99; Proceedings of the Sixth National Convention for Automation of Libraries in Education and Research, Nagpur, India, 18-20 February 1999. Also reviews areas of the library and information science curriculum, taught at library schools, that require revision to include the Internet and World Wide Web. These include library and society, information sources and communication media, information processing and organization, information transfer and dissemination,, information technology and systems design, planning, control and management of Internet information systems and practicals /hands on training.

### 2.2 IT skills for librarianship

**Houghton-Jan, Sarah (2007)** describes a real deficiency in the technology expectations for library staff, and it is strikingly evident in their overall lack of technical skills. This leaves libraries with a bifurcated staff in every library - those who are the go-to people for technology-related questions and those who are technically deficient, whether through lack of training or through an unwillingness or inability to learn. Libraries must, and be able to, teach the skills necessary for users to participate effectively in today's information economy and society. Establishing technology competencies is the first step on the road to filling this gap and helping libraries to be at the forefront of all aspects of technology, including staff skill levels. Libraries can reap major benefits by embarking on a project like this, including outlining clear management expectations, clarifying job descriptions, improving customer
service, creating a culture of learning within the library, and helping the library build an ongoing technology training program.

**Kousha, Keivan (2006)** analyses the results of a survey on educational needs of faculty members of 6 library and information sciences departments that have bachelors, masters and higher educational level in relation with their participation in elementary and professional ICT courses. According to the views and educational needs of library instructors 6 in job training course descriptions developed and suggested. Results show that, most of the faculty members (90 percent) know participating in suggested ICT courses very effective and useful in the process of their teaching and research in general. The author has evaluated the range of influence of participating in suggested special courses including search in Internet (90 percent), search in specialized and scientific databases (94 percent), assessment and citation to electronic informative sources (76 percent), designing a personal site (84 percent), Internet publishing: introduction to electronic books and references and journals (83 percent), much on teaching and research process of the specialized courses, 70 percent of faculty members tended to participate in general ICT courses (including Windows operating system, Internet, Microsoft Word (word processor), Power-Point).

According to **Tahavori, Zahra (2006)** the most important capital of any organization is the manpower employed, so investment on this power and their training is a necessary matter. Regarding the changes and evolutions which take place in the society, training of manpower of the organizations should be done at the shadow of proper and well-portioned education with these changes and evolutions. Librarians and information scientists as manpower employed in libraries and information centers are not excluded, and regarding the technological evolutions taken place in their working environment need to learn new skills and knowledge. Therefore library and information sciences programs should move on the direction of providing such skills needed.
Omekwu, C. O (2003) contends that the need for developing new professional skills is predicated on the evolving electronic environment. The emerging electronic systems provide better and broader platforms for the actualisation of the professional hallmarks of contact, communication and cooperation. Situated at the frontline of technological advancement, librarians and information professionals must redefine their work in a knowledge-based economy that is devoted to information management in order to meet the demands of the new environment. With professional activities and institutions migrating to the Web, professionals with the appropriate skills will have a competitive edge over others lacking in skills required to operate in the emerging practice environment. Both professional and personal skills are inevitable. Professional skills relate to knowledge of information resources, access, technology and management and using this to provide the best information services. Personal skills deal with skill sets, attitudes and values required for work efficient, communication and value-added contribution to their organisations. The author recommends computer, Internet, Information and Information professional of the digital age.

Butdisuwan, S; Gorman, G E (2002) reviewed the current state of professional library and information science (LIS) education in the 13 public universities in Thailand that offer degrees or masters in LIS. The authors covered: LIS degrees in Thailand; undergraduate degrees; faculty and students; and LIS education in transition (impact of information technology (IT), recognizing the significance of information, the library as a service organization, employment opportunities for information professionals). The rapid expansion in LIS education programmes and changes in the economic and social climate in which this education is provided have raised numerous problems. There has emerged a sense among the Thai LIS departments that they share a common set of problems for which solutions must be sought cooperatively. These problems include staff capabilities, course content, student selection and employment opportunities for graduates. The problems
regarding staff are beginning to receive some attention, with several universities now seeking to upgrade the qualifications of newer staff through alliances with overseas universities. This should go some way towards providing academics with higher qualifications and also research degrees more aligned with emerging needs in IT and information management. It will not, however, resolve the matter of an ageing academic population or perquisite inequities within individual universities. The problem of similar content of degrees is receiving less attention, although even here there is some tentative movement to offer genuinely new degrees in such fields as information management.

Marshall, J G (2000)\(^67\) reports the changes in library and information science (LIS) education and careers occurring under the influence of information technology, as revealed by ongoing investigations conducted as part of KALIPER (Kellog/Association of Library and Information Science Information Professions AND Education Project). Author focuses on the rapid expansion in course content, evening and weekend courses, distance learning and interdisciplinary. Also refers to a number of US and European documents concerned with the future of LIS education and considers the training of health science librarians in the USA, with particular reference to developments at the School of Information and Library Science, University of North Carolina at Chapel Hill which the National Library of Medicine recommended should be established as a centre of excellence for the education of health science librarians.

According to McGrath, William E (1985)\(^69\) despite impressive advances in the application of technology to library processes and the development of networks and utilities, Library and Information Science (LIS) is largely a derivative profession and not yet a discipline in its own right. Author discusses the extent to which LIS meets certain specified precepts. It has a long way to go before it becomes a high science. Also deals with the problem of the conflict
between LIS as service and LIS as science and puts forward a possible goal for LIS education.

Chandler, Y J (2001)\(^\text{16}\) in a special issue devoted to the theme: Technological advances in reference: a paradigm shift? Technology has affected the reference and information culture in libraries. With the increasing scope of information transfer, users have higher service expectations of library and information science professionals. The emergence of a digital information environment has changed the century-old role of the reference professional. After the rise of the Internet, many skeptics foresaw the end of a need for librarians, particularly those working in traditional positions such as reference. Nevertheless, data from the Bureau of Labor Statistics indicate an increase in the number of information professionals by the year 2008. Reference professionals are becoming more, not less, essential. Graduate programmes must examine the curriculum for reference and information access professionals. Greater access to information sources by users has highlighted the need for reference and information professionals to develop new skills including more technological knowledge, a better understanding of user information seeking, new instructional techniques and better communication skills. In addition to live classroom instruction, most schools offer reference and information access courses to a more diverse student body by employing distance learning technologies.

According to Nebenzahl, O (2001)\(^\text{79}\) Library and Information Science education aims to prepare students for successful professional careers. Educators vary in their opinions regarding the optimal mix of subjects; whether the emphasis should be on professional theory, principles and history or on the development of skills. Author considers how best to prepare students for long lasting careers in times of constant change and ways of ensuring sound theoretical foundations or professional skills in times of rapid technological, economic and cultural change. Concludes that to respond these challenges, the
curriculum should be multidisciplinary and should allow students to merge library and information science (LIS) with other subjects, such as computers and communication, law, or business administration. The curriculum should be modular and attractive to beginners as well as to experienced professionals. The curriculum should be based on principles of professionalism, leadership, service and cultural and social knowledge. Post-MLS certification should be considered as an alternative to PhD programmes. Non-academic programmes cannot replace professional studies, since they convey skills necessary for non-professional employees, but do not prepare for professional independence, responsibility and proficiency.

Capitani, P C (1993)\textsuperscript{15} considers the professional skills needed by information librarians and document lists in the computer age, and suggests the key elements that a suitable training curriculum should contain, taking as models the following 3 study courses: Information Sources Management, Syracuse University, New York; the European Institute of Information Management (Luxembourg) programme; and UNESCO's Modular Curriculum in Information Studies. The multidisciplinary training needed would focus on: technology; data selection, indexing, abstracting and database accessing; and specific knowledge in areas such as education, economics or law. Also discusses the question in an Italian context.

State of the art review of the recent evolution of library and information science education in the UK over the previous 10 years. MacDougall, J; Brittain, J M (1992)\textsuperscript{58} describe the historical context outlining the manpower requirements of the emerging markets as well as the impact of the information, computer and communications revolutions. They examines the changes in library and information science education over the past 5 years, including the fundamental restructuring and reorganization of many departments of library schools. Also describes the process of reevaluation and reassessment of the library and information science curriculum, with particular reference to
information technology, communication and interpersonal skills, Information management, increased specialization, and distance education.

Wallace, Danny P; Heim, Kathleen M (1989) contributed on the issue of creativity, innovation and entrepreneurship in libraries. They criticize the education of library and information science professionals in relationship to the issue of creativity. Authors also examine creative and rote modes of thinking as they relate to 'theory' and 'practice' in library education and discuss the reasons for the apparent decline in the recognized value of creativity in library and information practice. Finally considers the following aspects of creativity and curricula: managing uncertainty and change: recruiting future professionals; beyond the master's degree; and practitioners and the educational process.

According to Cukadar, Sami (2008) developments in information and communication technologies are increasingly causing a convergence of communities and their individuals. It is therefore of vital importance that professional associations take actions in order to take advantage of these developments by helping their members to increase their professional skills in using information and communication technologies more effectively and hence create more valued added through use of information-based decision processes. Within this context, the establishment and promotion of associations, platforms, consortiums and occupational collaborations have become evermore necessary. In this study the author explains the establishment process and the activities of the Turkish Law Librarians' Platform. Following a brief mention of some other nongovernmental organizations that operate in this discipline, author provides view on the rationale for and the influence of professional associations.

Karisiddappa, C R; Rao, N L (1992) examines the relevance and nature of computer training for library and information science (LIS) professionals and
trainees. They emphasize that there is no need to convert the LIS professional/trainee to a computer expert. Also suggest a draft curriculum for the inclusion of a course on computer applications in the master's programme in library and information science in Indian universities.

Ankem, Kalyani (2004)\textsuperscript{8} opines that in response to the proliferation of digital information accessible over networks, significant changes have taken place in library and information science (LIS) education during the last decade. To understand the changes, the study examined LIS faculty members' innovative behavior toward the end of the decade by applying a model of adoption that purports that material resources, experiential resources, value attributed to the innovation, and communication with adopters influence adoption of an innovation. The particular innovation examined was a complex, digital information-related innovation. It was termed collectively as Internet resource-based value-added processes and included the following set of processes that add value to Internet resources: (1) selection of Internet resources, (2) organization of Internet resources, (3) Internet reference services, (4) interface design in digital libraries, and (5) user analysis in digital libraries. The authors survey result indicated that the value of LIS faculty attached to the innovation was the most influential variable in their decisions in favor of early adoption. However, communication between early adopters and late adopters in LIS education was found to be weak and not influential in the late adopters' decisions.

2.3. LIS curriculum, China

Yanli-Q(1995)\textsuperscript{108} reviews the current state of professional education for library and information science in the Chinese People’s Republic, focusing on: continuing education; correspondence courses; formal professional education; undergraduate education; secondary school education; curriculum design and reform; core courses; and problems and planning.
Wu-X and Yuan-F-F(1994) discuss the way that reforms of the economic, science and technology and library and information systems in the Chinese People’s Republic, since 1978, and the accompanying opening up of the country to the West, has affected library and information education at tertiary level. Initially, library and information science followed the example of the USSR. They discuss the development of Chinese information industries; the integration of the work of libraries and that of information centers since 1978, and the current situation in Chinese library and information science education.

According to Chu, J (2001) as a result of the new reform of the college curriculum in China in 1998, the previously separated five information-related majors were merged into a new special 'information management and systems' curriculum. This change brings about both new challenges and new threats to the old information science specialize. However, it is inevitable for the specialize to change itself.

Liang Zhijian; Zhijian, Liang (1990) opines that the Science and technology information is a relatively new specialization in library information science education in China. It does not enjoy very high status among professionals in other fields, or among the students. The curriculum lacks depth and shortage of teaching staff is a problem. There is need for reform of the curriculum and a national system of accreditation. The Chinese people have to be made aware of the value of information and the need for qualified personnel.

Li, Chang-Qingt (1988) traces briefly the history of library science education in China for about 70 years. Before 1978, the development of an educational system for library science was very limited because of political movements and social insecurity. However, since 1978 the number of educational institutions for library and information science as well as the number of students enrolled has been increasing. Now, librarians and information specialists trained in various forms of library and information science education work throughout the
country. Problems remaining include the regional imbalance of availability of professional education and training, the inadequate distribution of professional staff, the quality and numbers of teaching staff, curriculum and publishing of teaching materials.

2.4 LIS curriculum, Pakistan

Mahmood, K (1997)\(^6\) describes Library education in Pakistan started in 1915. The first university level library school in Asia was set up in the area that is now Pakistan. In spite of a long history, library education in the country does not fulfill the needs of the new information era. Author describes the efforts made to impart education and training of information technology (IT) at 6 library schools in Pakistan. He presents a brief history of library education in the country, and describes the rationale of IT education for Pakistani librarians. The author recommends improvements in IT training and discusses factors involved in LIS education, such as: curriculum; faculty; teaching methods; hardware and software facilities; continuing education; and documentation. Finally he suggests ways in which IT education can be started with low budgets in Pakistani library schools.

Mahmood, Khalid; Khan, Muhammad Ajmal (2007)\(^6\) made a study based on an assessment survey of continuing education (CE) needs for ICT of library and information science (LIS) professionals. The particular purpose of this study was to seek answers to the following questions: What are the ICT-focused educational backgrounds, as well as personal and professional characteristics, of LIS practitioners in Pakistan? What are the preferences of LIS professionals for ICT training including methods of CE, providers, incentives, suitable days/time, methods of announcement, payment, and language? What skills or techniques do LIS professionals need to learn? /methodology/approach - a questionnaire survey was conducted on a sample of 200 professionals working in all types of libraries and information organisations in various cities of Pakistan. The findings of the study is LIS
professionals showed their preferences in the areas requested and a series of recommendations are provided based on the findings from the survey. The authors result of the study are use to the CE providers (i.e. library schools and professional associations etc.) and will help prepare LIS professionals for leadership in the new age, not only in Pakistan but also in other developing countries.

2.5 LIS curriculum, UK / Europe

MacDougall.J. and Brittain-J-M (1995) give the state of art review of the recent evolution of library and information science education in the UK over the previous 10 years. They describe the historical context outlining the manpower requirements of the emerging markets as well as the impact of the information, computer and communications revolutions. Examines the changes in library and information science education over the past 5 years, including the fundamental restructuring and reorganization of many departments of library schools. Further describe the process of reevaluation and reassessment of the library and information science curriculum, with particular reference to information technology, communication and interpersonal skills, Information management, increased specialization, and distance education.

Dudley-E and Raddon-R (1995) Examining the state of professional library and information science education in the UK. Edward Dudley outlines the shaping of services by political decisions and social and technological innovations, between the end of the 6Os and start of the 8Os, and the influence of radical changes in higher education. Dudley emphasizes the role played by the Library Association’s syllabus. Other developments include; the Open University; agreement by certain library schools on a common structure for 3 year part time courses for non graduate qualified librarians; growing importance f information technology; and the moves away from operations centered curricula towards concern for end users. Comments on the effects of public spending cuts and the decline in some of the traditional areas of study.
Rosemary Raddon reviews the 8Os and 9Os, noting forces which are preventing library educators from speaking with one voice or from one professional body: patterns of employment in a state of flux; library educators pushed and pulled by the vagaries of political directives; trainers looking for the money making market niche; student body no longer constant and clearly defined. The emphasis on efficiency and effectiveness can produce tensions between personal demands of students and administrative demands of organizations. Other factors considered include: National Vocational Qualifications.

**Fowell S.P. and P.Levy (1995)** describe an innovative new library and information science course for undergraduates, at Sheffield University, Department of Information Studies, and involving computer mediated communication and employing the Internet as the learning environment for courses, providing both the technologies for communication between participants, and a key information resource. Students gain practical experience of a variety of communication technologies, such as the use of UseNet newsgroups to support project group conferencing. LIS Curriculum Reference Sources.

**Brown, Barbara Traxle (2009)** provides some of the institutional and operational context of the University College Dublin (UCD) School of Information and Library Studies (SILS) prior to 2000. The history of the School, its predecessor, and the context in which it operated after 1977 is briefly outlined, using contemporary published and in-house archival evidence, from the 1960s to the late 1990s. Areas of convergence with UK library information science (LIS) education are identified, but also some key differences regarding LIS workforce recruitment, and third level educational provision in Ireland. Factors which influenced the curricular development of the school are cited, in particular the role of the UK Institute of Information Scientists, founded in 1958. The study is based on contemporary published
sources, and a preliminary examination of SILS archival evidence which has survived from the decades in question. Valuable records concerning the education and training role of the Library Association of Ireland, founded in 1928, have been recently analyzed by Ellis-King. A proposal for research funding to enable further exploration has been submitted. Owing to its focus on Ireland (ROI) the author expands recent coverage of UK professional education for librarianship prior to 2000.

**Andersen, Jack (2008)**\(^7\) opines that there is one main reason for redesigning our Bachelor's programme at the Royal School of Library and Information Science. In order to standardize European university programmes, these are now going to be described in terms of competencies; i.e. what can students do with the theories, concepts and methods they have been studying. At our school a decision was made in the summer of 2006 that we should start revising our programme accordingly. More precisely, it was decided that the school should use this opportunity to take a critical and fresh look at our existing programme - both Bachelor and Master's level.

**Tammaro, Anna Maria (2007)**\(^96\) analyses the trends for digital library education in Europe and addresses two questions: what are the roles for digital librarians? How should they be educated? Design/methodology/approach - The analysis is based on the results of the project "European Curriculum Reflections on Library and Information Science Education" and the proceedings of the Workshops on Digital Library Education, held in Italy in 2005 and in Croatia in 2006. The author finds three approaches to education for digital library are described: the emergence of the concept of "memory institutions"; the library-based approach to knowledge management; and the isolation of IT from library and information science (LIS) schools. Author suggested the roles of the digital librarian and the structure of a course for digital library education is proposed, but further research is needed on the definition of the digital library concept. Finally concludes that the digital
librarian should have a combination of technological and librarianship competences. And addresses the issue of education needed for digital librarians in Europe

**Toszegi, Zsuzsanna (2007)** describes the project European Curriculum. Reflections on Library and Information Science Education (European Curriculum). There are very significant differences between the education solutions in European countries. The lack of transparency and equivalence hinders the widening of co-operation between institutions, therefore a dialogue between LIS schools is needed about the structure and content of curricula. The author was written a report with the contribution of 150 European professionals. And the conclusion deals with the following themes: the situation of LIS-education in Europe; the proportion of theory and practice; the content of education (digitization of cultural heritage; information literacy; information retrieval; information society and barriers of free access to information; knowledge management and information management; knowledge organisation, librarians in a multicultural society, library and information history; mediation of culture, the place of practice in professional training; library management).

**Badovinac, Branka; Juznic, Primoz (2005)** seek to present an analysis of the development of schools of librarianship and information science (LIS) in the European Union (EU) applicant states until 2004. They discusses the potential and actual changes in their organization, notably their curriculum. Design/methodology/approach: The comparative analysis of LIS programmes was performed. The model presented by T.D. Wilson in 2001 was selected as the model for analyzing the data. The aim was to support the Wilson model with some empirical data from the specific countries. Findings of the authors study show that the long history of traditional library education in these schools was not a great obstacle to adapting the curriculum to new professional and political standards. LIS schools have generally changed their curriculum
towards those of modern LIS schools and have also embraced the EU outlines regarding higher education, especially the Bologna Declaration. The study has its limitations as it is based only on the formal courses' names and the formal content. Comparative analysis could also be accomplished through analyzing courses' content, students and teaching staff. The theoretical model of LIS courses analysis was tested on the LIS programmes in EU new member and applicant states. Testing the model shows its weaknesses and strengths. This could be developed in a simple but practical and useful tool for LIS programmes comparison and harmonization, where necessary.

Kajberg, L (2002) explains that a variety of formal and informal links between library and information science (LIS) schools in Europe exist. The European Union's SOCRATES programme, the NORDPLUS scheme and professional bodies (including EUCLID (European Association for Library and Information Education and Research) and IFLA (International Federation of Library Associations and Institutions)) offer a variety of frameworks for communication as well as European LIS education projects and networking activities. However, in spite of increased communication and networking efforts there are few spectacular results. Some progress can be noted, but visible and convincing effects of partnerships and networking in the European LIS academic community are difficult to identify. The Bologna Declaration, the joint declaration of the European Ministers of Education (June, 1999) also has implications for the European LIS academic world. Consideration is given to how the recommendations of the declaration can be fleshed out in a LIS educational context. However, progress within the LIS educational community in terms of cooperation and coordinated curriculum development appears meager. To remedy the situation, active cooperation and networking efforts within the European LIS education world must be initiated.

Stoker, D (2000) devotes partly to the theme: Library and information science education: past trends and future challenges. Author considers the five
'persistent issues' relating to library and information science (LIS) education discussed by Denis Grogan (Education for Information, 1 (1) Mar 1983, 3-23), to see whether they still apply in 2000, together with two additional issues that have emerged since that date. Although the issue of professional education for librarians in an academic institution has largely been resolved, there is a continuing debate on campus-based and distance learning modes of delivery of the place of competency based, National Vocational Qualifications (NVQs), delivered at the workplace. The issue of control by professional bodies has moved from being a matter of debate to one of continuing dialogue. The debate over the relative importance of theory versus practice, still rages, whilst the importance of fieldwork is still regarded as central to an LIS education. The nature and content of the core curriculum appear to be in a constant state of flux. The two new issues identified were: the nature and extent of the information disciplines (the relationship between librarianship, information management and knowledge management); and the changing pattern of higher education in the UK and character of the student body (increase in numbers, modularization, and quality assessment).

Miralpeix, C; Abadal, E (2000) discuss the state of the art of library and information science education in Spain outlining its history since 1915 and focusing on recent developments. They describe the expansion in the number of institutions offering library and information science education as well as in the number of degree and continuing education courses available today. Also look at components of the curricula emphasizing the role of management and information technology within the curriculum. Finally discuss emerging trends in library and information science education and look at prospects for the immediate future.

Abdullahi, Ismail; Kajberg, Leif; Virkus, Sirje (2006) aim to stress the importance of international and intercultural opportunities in serving as essential components in educating and training library and information
professionals. More specifically, they provide an overview of issues and trends in internationalization of higher education (HE) in general and illustrates how the concept of and approaches to internationalization have affected library and information science (LIS) educational settings and programs primarily in Europe and the USA. Based on a literature review, the authors discuss the meaning and definition of the concept of internationalization. Using a framework that draws on theoretical work on internationalisation of HE programs/contexts an analysis is then presented of the changing nature of internationalization in HE environments. The theoretical analysis is coupled with illustrations of current internationalization practices, projects, strategies and players within LIS education communities in Europe and the USA. Finally, a discussion of the principal issues of internationalization of the LIS curriculum is presented. They also find that the a synthesis is provided of the body of knowledge on the topics of internationalization in general and within the HE sector in particular. They also presented is an overview of the multifaceted internationalization activities taking place within LIS education. A range of thoughts and suggestions are given on how LIS schools can respond to the challenges of an increasing global world and, more specifically, how they can develop LIS programs and create classroom settings that are truly international in orientation and scope. The geographical scope is limited to Europe and North America and the focus of the study is particularly on issues and challenges within the LIS education community. The practical implications exposure to international educational environments and acquisition and absorption of intercultural values and skills serves to enhance and enrich the academic background of LIS students/graduates and add to the employability and career development of the coming LIS professionals. International outlook, networking and intercultural communication skills are essential for practitioners, policy makers, leaders, decision makers, researchers and educators in the LIS field. No comprehensive study of the internationalization of LIS programs in the context of HE sector-specific internationalization theory
has previously been published. They make a difference in the way it reflects on LIS internationalization issues and tasks from the perspective of the published literature on internationalization of HE.

**Hallam, Gillian (2005)** discusses an innovative approach to teaching cataloguing. At Queensland University of Technology (QUT), students enrolled in the Graduate Diploma of Library and Information Studies were involved in an independent learning activity which aimed to develop LIS students' foundation knowledge of descriptive cataloguing, while simultaneously encouraging students to think critically about broader issues that would inevitably impact on their role as information professionals. In the self-study program, learning activities included an interactive multimedia CD-ROM and a printed workbook with exercises, augmented by the opportunity for group discussion in weekly tutorials to enable students to share key aspects of their independent learning. Students were asked to critically evaluate the CD-ROM and the workbook and also to develop their own professional views about the arguments for and against the inclusion of cataloguing in the LIS curriculum. The author presents the outcomes of this pilot project.

**2.6. LIS curriculum, USA**

**Sutton B (1996)** describes an experimental undergraduate seminar on the production and dissemination of scientific knowledge which takes a multidisciplinary approach, using case studies to draw together theoretical principles from library and information science, insights from the philosophy and sociology of science, issues in critical thinking and problem solving, and details on the construction and use of information retrieval systems. Offered as an elective course to juniors and seniors, at the Graduate school of Library and Information Science at Illinois University at Urbana-Champaign, the course is designed to meet the needs of students who do not expect to become information professionals but who can benefit from a better understanding of
the principles of scientific knowledge production and the cultivation of information retrieval skills.

White Herbert S (1991)\(^\text{106}\) comments on a study conducted by Diana Shonrock and Craig Mulder to be published in College & Research Libraries. In their study they were able to identify 25 proficiencies which librarians, involved in library use instruction, felt they had to possess. These included: the ability to write down goals and objectives; instructional ability; planning ability; administrative ability; ability to train and evaluate others; ability to promote and market; and the ability to evaluate training programmes.

According to Wang M.L (1996)\(^\text{104}\) the information and technology revolutions are having a major impact on library schools’ curricula and the way the field is being defined. Programmes of study have shifted from a focus on traditional librarianship to one that includes a wider range of information orientations. The author discusses library and information science curricula planning in the UK and USA. Wang introduces the educational systems of the 2 countries, analyzes the changes occurring in library and information science education, and explores curriculum standards, education programmes, curricula objectives and structure, and courses in the UK and USA.

Cox, R J; Rasmussen, E (1997)\(^\text{21}\) consider the debate in the USA as to whether the basic librarianship degree should be generalized as an entry degree, or specialized in order to support library and information professionals working in specific roles or institutional environments. They presents 2 case studies: on archives and information systems and technology; that reflect different perspectives on the specialization versus generalization debate. Also points to the underlying trends towards convergence within the information professions and the blurring of distinctions between information professionals.

Sauperl, A; Saye, J D (1999)\(^\text{86}\) review the changes experienced in library and information science (LIS) education in the USA over the past 20 years and

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presents some thoughts about the development of LIS education in the coming decade. includes a description of master's, doctoral, and bachelor's degrees, s well as reflections on the changes influenced by the inclusion of information science and current developments of information technology. Statistical data are accompanied by illustrations from published literature and personal experiences with the development of programmes at the School of Information and Library Science, University of North Carolina at Chapel Hill.

**Rabina, Debbie L (2008)** informs the library and information science (LIS) educators of the status of grey literature among LIS students in the United States. More specifically the author examines what students enrolled in ALA-accredited library and information science programs know about grey literature and where they learned about it. Masters-level students at three North American LIS programs answered a four-question survey. The author findings revealed that knowledge about grey literature is gained across the curriculum with general reference sources being the course most likely to address grey literature and also indicates that the knowledge about grey literature is more intuitive and anecdotal than systematically acquired. In addition to the implications of the results, the relationship among grey literature, the library profession, and library education is discussed. Finally the author concludes with suggestions for further analysis and research.

**According to Davis, Jane M (2008)** in recent years a number of surveys of cataloging education have been conducted, and each of those surveys has suggested changes in library education. They reviews the current state of cataloging education by evaluating courses taught by 47 ALA accredited programs and compares the results to previous studies and examined the types of cataloging courses offered in LIS programs to determine if the type of course taught has changed over time. Additionally, the authors examined course offering frequencies to determine if US programs are making the kind of courses needed to train cataloging librarians available to their students. They
concluded that although US programs are continuing to offer and require introductory courses in cataloging and bibliographic control, they are relying more heavily on these introductory courses to provide the bulk of cataloging education.

According to Joudrey, Daniel N (2008) education for library cataloging and the organization of information (OI) continues to evolve. The current condition of graduate courses in these areas is examined through a review of the curricula of the 56 ALA-accredited graduate schools of library and information sciences (LIS) in the United States and Canada. The author study is the second installment of a longitudinal study that began in 2000 to examine the state of cataloging education, contains a snapshot of this component of LIS education from the 2005-2006 academic year. Finally examines the types of OI courses being offered, the number of these courses actually being taught, and current trends and developments in cataloging education based on comparisons with earlier studies.

According to Gollop, C J (1999) for more than a decade, demographic experts have predicted that the racial, ethnic and cultural makeup of the USA is on the verge of a major shift and that soon after the turn of the century, some minority groups will collectively become the majority, with Hispanics being the largest minority group. The implications of this have prompted private and public sector institutions to question whether they will be equipped to work with their 'new' constituencies. Schools of library and information science (SLIS) are not exempt from such self examination and must make every effort to prepare all their graduates to work in larger multicultural environments. However, such preparation may mean altering several courses in a school's curriculum. These kinds of changes are likely to meet with greater success when all parties involved, both inside and outside the class room, hold a committed and vested interest in the reorganization efforts. Author discusses
the issues of diversity in LIS education programmes and how these efforts can be addressed positively to serve students and their future users better.

**Powell, R R (1995)** presented a paper at the Association for Library and Information Science Education (ALISE) Annual Conference, `Teaching the right stuff. Teaching it well. Telling the people what we do', Philadelphia, Pennsylvania, 31 Jan-3 Feb 1995. Author presents a brief history of doctoral programmes in library and information science (LIS) and uses this as background to a review of the purpose of the PhD degree, the types of research involved, the curricula of LIS doctoral programmes and the current trends in LIS research. A literature review indicates that the total amount of instruction required in research methods and the proportion of instruction required in cognate fields are increasing. Other trends include increases in interdisciplinary and technology based research. Finally concludes that the research methods curriculum for the PhD should continue to emphasize basic research that will generate new knowledge, build the theoretical base of LIS and contribute to the advancement of the profession.

### 2.7. LIS curriculum, Canada

**Gastaldy-S-Bertrand (1993)** presents an account of the major curriculum revision of the master’s degree programme in library and information studies at the Montreal University, School of Library and Information Studies, Quebec Province. Concludes with comments on the positive effects of the revision within the school as well as the University and the profession.

**Garrett L. (1997)** The educational philosophers of John Dewey, Edgar Dale, and Jerome Bruner asserted that experience is essentials to the learning process. Dewey emphasized that the quality and the continuity of the experience are critical. Dal advanced these ideas by developing the Cone of Experience, a model that visually demonstrates how concrete experiences give meaning to abstract theories. Bruner’s Theory of Instruction explicated how learners move
from enactive representations through iconic representations to symbolic representations in the learning process. L. Garrett describes the experiential learning activities within the curriculum of the School of Library and Information Studies, Hawaii University at Manoa. The purpose of the study was to determine if experiential learning contributed to the attainment of the class objectives in LIS 605, Basic Cataloguing and Classification. It examined the student’s perceived value of these activities and revealed that students believe experience is valuable in achieving the course objectives. The author concludes that experiential learning is viewed as effective and should be included in library schools cataloguing instruction. IS Curriculum USA & Canada:

East D. and E. Lam (1995) discuss the need for multiculturalism to be an integral part of the library and information science curriculum and relates the results of a survey of accredited programmes in library schools in Canada and the USA on the issue of multiculturalism and curriculum modification and revision. The authors conclude that the issue has received increased attention and positive action, but that a certain tension exists. Notices that the least activity in modification and revision concerning multiculturalism has taken place in academic librarianship courses. Supports extended efforts of library schools to prepare librarians for work in an increasingly diverse society and library environment. LIS Curriculum on-line searching, And Informational Retrieval.

Tibbo, Helen R (2006) opines that the archivists in Canada have described, discussed, and debated the necessary and optimal content, configuration, and venue for archival education for close to a century but have given little consideration to integrating technology within archival curricula. Increasingly, archivists are faced with a high tech world in which they must understand issues including information systems, the nature of electronic records and databases, record migration, digitization, and web design and creation for
provision of access. The author explores the nature and extent of information technology and information science coursework and knowledge discussed in the Society of American Archivists' Guidelines for a Graduate Program in Archival Studies and that students have available to them while in archival programs. Finally concludes with a proposal for Library and Information Science education programs that prepare archivists to explore developing Certificate of Advanced Studies programs in archival management on top of master's degrees to allow for additional information science coursework.

Kay, Deborah (2008)\textsuperscript{47} explores what the library can expect when the educational requirement is a library technician diploma. In Canada, the diploma awarded to library technicians is the result of successfully completing a two-year program, usually offered through a college. Currently, there are seventeen library technician programs in Canada. The name of the diploma and the program are the same, with the majority of programs granting a Library and Information Technology diploma. In Ontario, a Library and Information Technician diploma is awarded. Library technician programs prepare graduates to perform the skills required for the day-to-day operations of a library. The library technician, equipped with applied knowledge, is immediately able to work on tasks in the library: acquiring materials, ordering and receiving, or subscribing and checking-in for serials; charging and discharging items for circulation; or borrowing materials and obtaining copies through interlibrary loans and document delivery.

Weihs, Jean (2008)\textsuperscript{105} presents a brief history of the emergence of library technician programs in Canada. It began in 1962, when sixteen students graduated from a one-year program at the Manitoba Institute of Technology in Winnipeg, the first educational institution in Canada to offer formal training for library technicians. Four years later, another one-year program was started at the Vancouver City College, and in the same year the first two-year program was launched at Lake head University in Thunder Bay, Ontario. The next year
was a big year for the expansion of library technician training, when five two-year programs were started in Ontario and one in Alberta. Eventually all programs were two years in length, and over time many programs developed extension courses and/or distance learning, and it became possible to obtain a diploma by these part-time methods. Some programs also offered fast track programs for students with previous post-secondary education.

2.8. LIS Curriculum, India

Mishra S. (1997) discusses the importance of librarians as a medium of transmission in the communication process. The author presents a brief history of Library and Information Science Education in Indian along with observations on the Curriculum Development Committee (1992) Report. He outlines detailed syllabi for the Bachelor of Library Science and Master of Library Science degrees to prepare professionals for the 21st century.

Khan H.A (1998) examines various factors in assessing the current status of library and information science education, including: planning programmes; the pattern of library schools; nature of entrants; nature of faculty; level and content of courses; support resources; standard of education; accreditation; continuing education; professional ethics; impact of communication and information technology; interdisciplinary nature of studies; and issues involving coordination and operational issues.

Issac, K A (1996) examines recent developments in the field of library and information work and their implications for library and information science (LIS) education in India. Topics covered include the greater variety in types of libraries/information centers; levels of professional competence required; the increasing variety of packages of information and diversity of services; resource sharing; bibliographical databases; and the role of information technology. Author outlines the current state of LIS education in India and makes recommendations for future provision. Also emphasizes that in
planning the curriculum for LIS education, specialization should be built around a basic core programme that enables students to grasp the essential unity of librarianship.

Singh and Kalra (1996) emphasize the need to restructure the Master of Library and Information Science courses in order to develop quality manpower to satisfy the demands of an emerging information society in India. The focus of the new model should be the development of: core competencies for information communication and information use; end user training; information resource management; information technology; and research evaluation. The task requires a national effort for quality control via accreditation. They recommend the establishment of a national level accrediting body.

Mangla, P.B. (1994) reviews formal library and information science (LIS) programmes at the postgraduate level offered by university departments, information centers and research institutions in India, Pakistan, Bangladesh and Sri Lanka. Author gives a brief historical background followed by details for each country under the following headings: library scene, courses, admission requirements and duration, enrolment, main features of the curricula, and teaching faculty. Also makes general observations on the state of LIS education for each country and summarizes the similarities and differences.

Kaula (1988) discusses the impact of Melvil Dewey’s contribution to library science education in the USA and Ranganathan’s contributions in India. States also the library science education pattern in the UK. Makes an evaluation of education patterns in India, UK, USA and Scandinavian countries. Author presents an observation on vital issues like professional content of courses, growth of LIS schools, library facilities and teaching method. Also discusses the impact of information revolution and training to professionals for new tasks and their continuing education. Lays emphasis on the participation of senior working librarians in the teaching of library and information science and also
the need to have some standardizing agency to maintain the standards that have not been adequately maintained.

**Rajasekharan K (1983)** briefly describes the development of library education in India. Outlines the present system. 6 levels of course are available, the most popular being a 1-year diploma/bachelor degree course. He suggests a new pattern for library education which would allow the study of librarianship as a subsidiary subject at undergraduate level and introduce 2-year post-graduate courses. Author discusses recurring problems in library education in India, including: over production of library schools; failure to reflect special Indian needs in the teaching content; too much emphasis on library techniques at the expense of services and management; failure to place librarianship in the context of the education system; and lack of good quality teachers calls for a national central body to monitor standards for library education in India.

**Singh, S.P. (2003)** traces the emergence of library and information science (LIS) education in India before and after independence. And describes the current status, the different patterns and levels of LIS education, as well as the research programmes being offered by various universities. Also provides an overview of the institutions providing LIS courses at various levels through regular courses and open schools. The author emphasizes the need for having a national level accreditation body to maintain uniformity and standards in LIS education. At last he discusses the problems affecting the status of LIS education and suggests ways to solve these problems and the approaches to prepare the LIS professionals to face the growing challenges of the job market.

**Jeevan, V K (2002)** presents some of the developments in providing refined information services and better information organization such as the electronic SDI service and in-house library software development work in the library of a premier academic institute in India. He also stresses activities concerned with
professional development and growth such as experiences gained as part of the technical committee in a national level conference, activities as moderator of IFLA's list server for Library and Information Science in India (INDIA-LIS), and work related to LIS education. The author also describes some aspects of the future plan, of evolving a content personalization system with the aid of electronic contents procured through subscriptions and consortia access as well as free resources on the Web.

**Navlani, K (1991)** reports the University Grants Commission National Seminar on Information Technology and Libraries organised by the Department of Library and Information Science, Punjabi University, Patiala, 2-3 Feb 90. Papers were given on the following topics: changes in society as a result of the information revolution; definition, value and format of information and information packages; the need for a closer look at library and information science (LIS) curricula; information technology (IT) and university libraries; IT in LIS education; problems and prospects of IT; information centers and tools; and the need for user education.

According to **Varalakshmi, R. S. (2007)** the Library and information science education in India is nearing to celebrate centenary celebrations. However, several issues need to be resolved to meet the demands of the contemporary information society. She also reviews the growth of LIS education in India, foresees the future trends and suggest for national consensus on some of the basic issues.

According to **Jeng, L H (1993)** the traditional library and information science (LIS) curriculum for the organization of information assumes a cataloguing paradigm that is built on the concepts developed throughout the history of library cataloguing as well as practical knowledge and skills of applying current standards and systems. Advocates for LIS curriculum reform point out, however, that this paradigm must be replaced by knowledge of
resources and systems management in order to equip LIS graduates with the skills needed for an information society. Author also proposes a paradigm in which information is defined in the context of 5 attributes and cataloguing is perceived as a mode of organizational behavior. Finally suggests some implications of this for the core curriculum of organization of information.

2.9. LIS Curriculum, Philippines and Taiwan

Vallejjo, R.M (1991)\textsuperscript{100} discusses research methods used by graduate students at the Institute of Library Science (ILS) at the University of the Philippines (UPILS) covering research in library and information science in general; pre-UPILS research; research by graduate students at ILS; research by gender of student; by subject examining bibliographies, education, librarians, information technology/computer applications in classification, literature of Philippine librarianship, and other research; and nationality of foreign students. Author also resents statistics on subject and year of research; gender distribution by year; the ranking of research methods and ranking of nationality of foreign students.

Mangla and Vashisht (1976)\textsuperscript{66} trace the historical development of library and information science education from 1910 to date. Underlines the role of different agencies, such as library associations, state governments, universities and a few individuals, in initiating library and information science courses at different levels. Mention the emerging pattern of library and information science education. They review the recommendations of various library science committees, seminars, conferences, workshops and conventions. They also suggests norms for improvement in course contents at different levels, institution of M.Phil and PhD programmes, duration of courses, methods of teaching and evaluation, entrance requirements and need for incentive scholarships, status of library and information science departments in different universities, accreditation of coursed, and the need to produce library and information science literature in regional languages.
Kumari, J V (2001) reviews briefly the historical as well as the current status of library and information science (LIS) education in India. She traces out various areas of concern in LIS Education, where there is a need for proper planning and decision making to meet the challenges posed by recent changes in the field. The author covers the study of areas such as: LIS curriculum, course content, admission criteria, teaching methods, research, infrastructure development, teaching faculty, accreditation, continuing education programmes, library literature, impact of information technology (IT). Finally concludes by making a number of suggestions for LIS education in India.

2. 10. LIS Curriculum, Africa

According to Bell, Fiona (2007) service-learning involves a dynamic process linking real community priorities, issues and problems with student learning, research and development. This paper outlines service-learning projects in LIS education undertaken in South Africa since 2000, as part of the national Community-Higher-Education-Service Partnerships (CHESP) initiative. The author focuses on the service-learning project undertaken at the former University of Natal and will refer briefly to a similar project at the University of the Western Cape. The Pietermaritzburg campus of the University of Natal chose the Inadi community, specifically the Emzamwemi High School, as the service learning site in this area, as it was both rural and historically disadvantaged. The University of the Western Cape chose sites in the Delft and Belville South areas to work in public libraries. Also focuses on the results and experiences of the participatory action research carried out by the Post-Graduate Diploma in Information Studies students in the Inadi community and reflects on some of the opportunities and challenges of service-learning as an arena for research, curriculum reform and community development in South Africa. The author also assesses the feasibility of incorporating service learning into the LIS curriculum. The research and practice embarked upon in a real-life situation for the students serves to inform both the needs of information
provision to the community and the need to build up a body of service-learning research which is unique to the South African context.

Minishi-Majanja, Mabel K; Ocholla, Dennis N (2003) mapped and audited the types, nature and diffusion of ICTs in LIS education in sub-Saharan Africa. Questionnaires were sent to 51 LIS schools in 19 countries of sub-Saharan Africa, of which 29 (57%) were returned. Most LIS schools have a significant ICT content in their programs, and most ICT modules are highly rated as core/required within these programs. Practical training for ICT skills was included in all modules but to a limited extent. ICT use in teaching and learning was largely focused on computer literacy, followed by use of ICT in bulletin boards, distance learning and collaborative teaching. Only a few African LIS schools, with significant growth in South Africa, employ online teaching. ICT is used in research mainly to collect research information, to identify sources for research funds and to apply research tools such as statistical packages. There was also evidence of strong use of ICT for academic administration largely through stand alone PCs or offline. Computer hardware availability was noted to be low as the number of computers in terms of computer student or staff ratio is extremely low. While a variety of computer software is available in the market with Microsoft products leading the market, software licensing requirements are problematic because of cost and infringements. Most institutions have set up mechanisms to provide staff with ICT competency, and evidently the agenda for ICT development for LIS education in Africa is still quite long. Such an agenda should always include provision of resources and better ICT infrastructure, staff development, ICT policy, ICT accessibility for students and staff, curriculum development, collaboration and networking for resource sharing, distance learning education, practical education/training for skills development, experiential learning, and integration of ICT in LIS education.
Nassimbeni, Mary; Underwood, Peter G (2007) examine the extent to which the South African Library and Information Science (LIS) agenda maps to the national agenda for the reconstruction and development of the country, which is geared to the elimination of poverty and inequality. The nation has been described as comprising two societies: the one modern and well developed, the other characterised by masses of people living in dire poverty. The mandate of LIS in South Africa includes supporting and stimulating the technological and information development of all communities and providing effective LIS education to meet this goal. The government has embraced the concept of the Information Society, emphasising the link between economic growth and Information and Communication Technologies (ICTs) and has pointed to the need for information literacy education. They present a critique of the fit between LIS policies and practices (including the curriculum) and the needs of an emerging democracy and its development goals, challenged by the duality of globalisation and marginalisation.

Alejandro U.T (2007) discusses ideas and proposals relating to the knowledge, skills, and attitudes (competencies) in technology as an aid to the information and management training required of Colombian librarians in light of the challenges of today's society, and how our universities can integrate technology into their undergraduate, postgraduate, and continuing education. Three fields of action are considered in the area of information and knowledge management: (1) organizations that facilitate access to information and knowledge supported in TIC (modern information units, or U.I.); (2) organizations in the information sector in which the TICs are both a product and a medium of operation, and (3) organizations of whatever sector that need to manage information and knowledge supported in TIC. Two key library functions are related to such management: (1) organization, standardization, and transfer and (2) user education (public, clients, and/or readers), whether internal, mixed, or external - in any of these three fields of action mentioned above.
Raju, J.; Arsenault, C (2007)\(^4\), present a comparison of first-level LIS education and training between South Africa and Canada, and based on this comparative description, qualitative identification of similarities and differences are made to highlight strengths and weaknesses in each case. They conclude that while similarities exist, the differences stem largely from the different social contexts in which this education is located. Notwithstanding this, there are lessons to be learnt from the endeavors of each of these countries.

According to Minishi-Majanja, Mabel K (2004)\(^7\) Information and Communication Technologies (ICTs) have become central in the education and training of Library and Information Science/Service (LIS) because of the great influence of these technologies on the profession. The author purpose is to determine the extent to which ICTs are applied in research, teaching, learning and academic administration, and establish the levels of ICT support available in South African LIS schools in terms of policies, infrastructure, hardware and human resource. The descriptive survey method was applied. Questionnaires were electronically mailed to 15 LIS education departments in January 2003, out of which 9 (60%) responded. Some of the data was updated by respondents in July 2004. The findings indicated that all LIS departments in South Africa had responded to ICT developments by offering a wide range of ICT modules and embracing the use of ICTs in teaching, research and academic administration. The author observed that the changes or modifications in existing qualifications and programmes are ongoing activities in several institutions. The majority of LIS departments in South Africa have interactive Web pages within the respective university/technikon Websites. However, for teaching and learning, only a few of the LIS schools used ICTs in presentation of lectures, while for research, teleconferencing and e-publishing ICTs were not yet extensively exploited. Author recommends that South African LIS schools should increase the use of ICTs in teaching and learning, as is the case in administration, to foster greater effectiveness. South African LIS schools
should take advantage of experiences of online and distance education already well established among some universities in South Africa, in order to reach work-bound and other disadvantaged students due to distance from learning centres. The advantages of good Internet access should also be exploited and a mechanism for supporting accessibility be lobbied for students from the technologically disadvantaged areas.

Albright, Kendra; Kawooya, Dick (2007)\(^3\) think that the Library and information science (LIS) education in Sub-Saharan Africa has its historical roots in colonialism, modeling its curriculum after European LIS training, based upon the information needs of the European cultures. While this model has been useful in building and guiding LIS education in Sub-Saharan Africa, it has not adequately addressed the unique cultural needs of the African societies it represents, particularly in achieving the millennium development goals (MDGs) established by the United Nations. They present a critical analysis of the LIS profession within a Sub-Saharan context. Beginning with an overview of libraries in Sub-Saharan Africa, it proceeds to examine LIS education and practice within a cultural context, critically analyzing existing structures that have their roots in colonialism. They also raise questions regarding the adequacy of current LIS education and practice towards meeting development goals, using HIV/AIDS as an example. Drawing from previous research and projects in Africa, recommendations for the future of LIS education in Sub-Saharan Africa are presented. A case study from an existing partnership between academic programs in LIS in Uganda and the United States is used as an example of the benefits to both institutions.

According to Mammo, Wondimeneh (2007)\(^6\) Library and Information Science (LIS) education in Ethiopia started in the late 1950s, passing through several ups and downs. In an attempt to assess the status of LIS education in Ethiopia, the reasons for the closure of the first Bachelor of Library and Information Science (BLIS) program, review of strengths and weaknesses of
existing LIS programs, the reasons for discontent of employers on the services provided by LIS professionals as well as the reasons for the dissatisfaction of the LIS professionals were investigated. Interviews (for LIS employers) and questionnaires (for LIS employees) were administered at selected organizations. Some of the general findings of the study are that the BLIS program at the Addis Ababa University was changed to a pure Information Systems program due to university-wide curriculum review initiatives; the current BLIS program at Jimma University is the strongest in addressing the limitations and expectations identified by LIS employers; and the reasons for the dissatisfaction of LIS professionals are pay, promotion, benefits, rewards, procedures and communication aspects of their job. LIS professionals believe that their qualifications are inadequate for performing their job.

The issue of what constitutes or should constitute the "core" in library and/or information science (LIS) education and training is one that is frequently debated

Kemparaju, T D; Nyainboga, C M (2001) define information technology (IT), its needs, benefits and components. They observe the shifts in information culture from traditional forms of information towards electronic information, the 'hybrid library', and librarians' readiness for the future in an information age. Also considers the role of IT in library schools, focusing on the use and importance of the Internet, and why it must feature strongly in the library school curriculum.

The Department of Library Studies at Kenyatta University in Nairobi, Kenya has for some time now been reviewing its curriculum, for the purposes of meeting the requirements and needs of a twenty-first century global, networked society and to meet the country's information needs. To achieve this, the University has been working on approximately 10 different programs from certificate to masters in both library and information science and archives administration /records management.
Gathegi, John N; Mwathi, Peter G (2007) analyze the process involved in this undertaking and critically examines the underlying assumptions embedded in the exercise. They discuss problems encountered, solutions devised, and the products derived from the curriculum review. The study is a collaborative effort between a faculty member based in Kenya and one based in the United States.

LIS training programme in Africa date from early independence period. In French-speaking West African area, few countries have an LIS school. The existing schools have been created in partnership with either an international organization or a northern country. The curriculum delivered is not always updated as in developed countries.

Megnigbeto, Eustache (2007) studies main objective is to measure the gap between LIS curriculum as actually delivered in developed and developing countries in the age of the information and communication technologies (ICTs). A couple of schools were chosen - English and French-speaking area - from Northern America and Western Europe; their curriculum served as basis evaluating those in West African French-speaking countries. The conclusion of the author is that LIS curriculum in Africa has changed less since the schools' first creation and ICTs are not present as in Western countries. This trend brings out the problem of the curriculum pertinence and the competitiveness of the graduate students in the international employment market.

Aina, L.O (2005) traces the inability of the curricula of LIS schools in Africa to respond to the immediate job environment in Africa. The main weakness of the curricula is that they reflect essentially the curricula of LIS schools in the Western World. Thus, while most of the LIS curricula are relevant to the traditional library setting, the curricula fail to address positively the emerging information market in Africa and the untapped information job openings in the rural areas. The author proposes an ideal curriculum that would cater for the
traditional library setting, the emerging information market and the job openings in the rural community. It caters for both global and local needs. This curriculum consists essentially of eight modules. These are library concepts, information and communication technology, archives and records management and rural information service. These four modules constitute the core of the ideal curriculum. Other relevant modules in the curriculum are research, management, publishing and public relations. The ideal curriculum was compared with the existing curricula of three library and information science schools in Africa, with a viewing to establishing the divergence between these existing curricula in Africa and the ideal curriculum proposed.

2.11. LIS Curriculum, Iran
Fattahi, R.; Parirokh, M.; Davarpanah, M. R.; Azad, (2006) A study a short report of a research project carried out, upon the commendation of the Ministry of Science, Research and Technology, by the Department of Librarianship and Information Science of Meshed Ferdowsi University between 2003-2004. The goal was to study and revise the current curriculum to bring it closer to the changing needs of the present society. The curricula of the U.S.A., England, Australia, India and Iran were reviewed and compared with the objective of introducing a new syllabus for the two fields of Information Management and IT Management. The new curriculum was sent to some experts and faculty members of the departments of Librarianship and Information Science of Iran that ran courses at M. A. level. They were asked to issue their comments on the curriculum. Then, the final version of the curriculum was verified after undergoing some revisions by the Revising Committee of Meshed Ferdowsi University. The new curriculum was also sent to the Ministry of Science, Research and Technology to be sent to universities after being approved by the Ministry.

Hayati, Z (2008) investigates competency requirements of Iranian public librarians in library educational departments and working places. A group of 72
people from public libraries answered to questions. Questions cover all areas of library performances. The results show that the traditional competencies such as cataloging, management of collections, information resources and acquisition tools are still important for public librarians. However, the generic knowledge and skills of information services were recommended by respondents.