Chapter 2
Review of Related Literature
REVIEW OF RELATED LITERATURE

2. INTRODUCTION

Review of related literature is conducted to enable the researcher to get a clear understanding about the specific field of study. It also helps the researcher to have an insight into the tested methods, procedures and interpretations of similar studies conducted elsewhere. Considerable amount of literature is available regarding application of Information Communication Technology (ICT) in libraries, professional development and continuing education needs of library professionals. A survey of the literature found that most of the studies are reported from foreign countries and that such studies are not given due importance by the researchers in library and information science. An attempt is made in this chapter to present a survey of the literature available in India and abroad under the subheadings listed below:

1. ICT in libraries

2. ICT and library professionals

3. Professional development and educational needs of library professionals.
2.1 ICT IN LIBRARIES

ICT has changed the traditional methods of library activities and services providing new dimensions for teaching, learning and research in higher educational institutions. With the help of ICT tools, it is possible to store, retrieve, disseminate and organize information by creating websites and databases. Information is now published both electronically and by print making it accessible to users according to their demands. It is important to assess the ICT applications in library and information centres in the context of changing user needs. This section includes studies related to the application of ICT in libraries.

Jeevan and Saji (2004) present the results of a survey conducted among the premier libraries in Thiruvananthapuram, Kerala to assess the Information Technology adoption in these libraries. A survey using questionnaire and interview was used for getting information about the different IT components useful for better library organization and comprehensive as well as swift information services. Eighteen scientific, technical and research libraries both under Central and State Governments based in Thiruvananthapuram participated in the survey. All eighteen libraries were of the opinion that IT had a positive impact on the day-to-day work of the library and that IT played a positive role in enhancing services,
user satisfaction, meeting users' demands, and overall library image. Problems faced in IT adoption included inadequacy of funds, shortage of IT skilled manpower, difficulties in periodic up-gradation of infrastructural facilities, frequent change and advancement of technology, high hardware and software costs, insufficient training of professionals and absence of hands-on training.

Walmiki and Ramakrishnegowda (2009) in a survey of University libraries in Karnataka outline the status of ICT infrastructure of selected six University libraries. A structured questionnaire was used to obtain data from the University librarians. The data collected include details of hardware infrastructure like availability of servers, PC’s, Laptops, printers, scanners etc. Software facilities for automation of house-keeping operations, digital library activities are included in the survey. Availability of campus LAN and internet facilities to provide access to information sources are detailed in the study. The survey reveals that most of the libraries lack sufficient hardware and software facilities, and internet with required bandwidth. The University libraries have to plan, implement and develop ICT infrastructure to exploit the benefits of digital information environment.

Singh, Sharma and Negi (2009) reports a study of the current state-of-the-art use and applications of ICT in LICs in Noida. The study is based
on 25 LICs of public, government, corporate, public, and private enterprises in Noida. The data was collected through a structured questionnaire through mail/e-mail among the librarians of selected institutions. The study tries to find the opinion of the librarians about the barriers in application of ICT in LICs and their attitudes towards adopting the technology. The results show that lack of awareness, interest and initiation of library professionals towards ICT application in the library are the major barriers of ICT application in the LICs even though the attitude of the librarians towards ICT application/use in the LICs was very positive. The majority of LICs in Noida has good hardware, software facilities to some extent but ICT based services, and products are not reaching the users to the extent expected due to the problems of inadequate finance, infrastructure, and trained library professionals leaving available ICT infrastructure underutilized. Therefore, it is essential that ICT resources should be enhanced; ICT skilled staff should be increased or trained in using and handling ICT.

Sampath Kumar and Biradar (2010) observe the use of information communication technology (ICT) in 31 college libraries in Karnataka, India by analyzing the ICT infrastructure, status of library automation, barriers to implementation of library automation and librarians' attitudes towards the use of ICT. The survey carried out using questionnaire, observation and
informal interview with selected college librarians show that lack of budget, lack of manpower, lack of skilled staff and lack of training are the main constraints for not automating library activities. Even though library professionals have shown a positive attitude towards the use of ICT applications and library automation, majority expressed the need for appropriate training to make use of ICT tools.

2.2 ICT AND LIBRARY PROFESSIONALS

Vespry and Kitiyadisai (1992) survey the application of information technology (IT) among academic libraries in Thailand. The survey shows that Librarians are generally aware of the role of IT in libraries and keen to automate their library services. It also shows that the speed of IT implementation in academic libraries depend to a large extent on administrator’s support.

O’Neill (1998) examines the current status of continuing education courses in American schools of Library & Information science, with special emphasis on Librarians working in collection development and acquisitions. A survey of American library schools reveals that only a small percentage of the continuing education workshops deal with technical services. Most of the continuing education workshops are technology oriented. A number of LIS
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schools offer semester long courses through various technologies, World Wide Web, satellite, videotape etc. The author suggests that LIS professionals must be more actively involved in the continuing education programmes at schools of library and information science.

Tran and Gorman (1999) reports results of a survey questionnaire survey administered to 36 information professionals in Vietnamese libraries, which explores progress in the implementation of information technology (IT) in the library and information sector. It intends to discover what librarians have been doing with computers and to describe current electronic resources available in libraries. It also identifies knowledge and skills needed for the provision of electronic services. Most librarians indicate that they need to be trained in the use of computers, new IT, CD-ROMs, Internet services, etc.

Chisenga (1999) surveys the use of internet for professional development by library professionals in Sub-Saharan Africa. A survey of 47 librarians through mailed questionnaire reveals that internet and electronic mail facilities are mainly accessed at workplaces. The use of facilities for accessing E-journals, discussion groups and other web resources was quite low and in some cases nonexistent due to the shortage of computers, poor telecommunication lines and inadequate internet use skills. The study finds
that the library professionals have the opinion that internet could play an important part in facilitating professional networking and sharing of information.

Ondari-Okemwa (2000) reports a study undertaken to examine the specific training needs of practicing professional librarians in the Kenyan public university libraries. Two methods were used for the study. One was observing library staff in the Kenyan public university libraries at their places of work over a period of two years; the second was the use of personal interviews with the librarians. The author examines the need for continuous training of library staff in Kenya because of the rapid changes in information technology (IT). Library staff must be equipped with new techniques of handling and managing information. The training needs as evaluated from the study are Information and telecommunication technologies, evaluating and using computer hardware and software, understanding computer and information concepts, understanding systems analysis, and accessing information via the Internet., self-management skills, teamwork skills, verbal, non-verbal, and interpersonal communication skills, marketing skills, training in virtual librarianship and total quality management training.
Singh and Garg (2002) evaluate the biomedical information centres and libraries (ICLs) in India. The main objectives of the study are to assess the state of the art infrastructure available in biomedical ICLs, to determine the impact of computers on biomedical librarianship, use of computers by ICLs users and information professionals and to identify the impact of computers on career development in ICL services. Three sets of questionnaires have been used to determine the relationships between IT development and its applications in biomedical ICLs by users and professionals. The survey reveals that there is an increase in number of technologies available and adequate hardware and software facilities in ICLs. The study shows that computer based networking facilities are gaining importance in biomedical ICLs. Biomedical information users depend more on computer facility for various purposes. The users are of view that all staff should have higher qualifications for the effective use of IT based services.

Mugwisi and Ocholla (2003) examine Internet use, trends by academics and librarians at the Universities of Zimbabwe and Zululand, with specific reference to the use of resources for research and teaching. Results of a survey by means of a questionnaire among the study population indicate high computer and Internet skills among librarians from both institutions. The results also indicate that e-mail and the Web were used most for work
and personal use, while telnet, other library OPACs and electronic journals were used most for work purposes. The study also highlights somewhat similar problems facing the two institutions in terms of Internet accessibility. Access was a major concern, due to inadequate provision of computers and the existing connection to the Internet. Article also highlights inadequate training in the use of Internet resources and lack of awareness among academics and other potential users.

**Ramzan (2004)** determines the extent of information technology (IT) utilization in libraries in Pakistan together with librarians’ level of knowledge in IT and their attitudes toward IT in libraries through a survey of 244 librarians in Pakistan. Respondents were asked to indicate the extent of computers, CD-ROMs, network servers, and other hardware, email, Internet, software, and electronic databases available, use of IT-based systems and resources by the library staff and patrons, and the degree of changes occurring in IT applications in their libraries. The respondents’ level of knowledge in IT was examined through measuring the extent of knowledge of technology, rate of keeping abreast of IT, and how much they had written or published about IT in libraries. Regarding the extent of knowledge of technology, the data shows 13.5 per cent of the respondents
had no knowledge in technology, 33 per cent had little knowledge, while the majority, 41 per cent of the respondents had a moderate level of knowledge in technology. The findings of the study also reveals that availability of appropriate IT and its proper utilization are important variables that are capable of increasing the librarians' attitudes more positive toward IT which implies that librarians require continuing education and exposure to increase their level of knowledge of new technologies.

Scherrer (2004) reports a study of the reference librarians from academic health sciences libraries to examine how their roles changed over the past years and what challenge these changes present. A series of eight focus groups selected from reference librarians were studied. The survey results confirm the role changes of librarians as a result of advancements in information technology. In addition to providing traditional reference services, it was found that librarians engage in teaching, designing web pages, engage in outreach through liaison initiatives etc. Librarians strived to meet their patrons' needs by developing Web pages to facilitate patrons' finding the resources they needed as easily as possible. Librarians identified areas for further training in specialized databases, resources needed by researchers and other modern technologies. Implications for library education and continuing professional development is also stressed.
Adeyoyin (2005) surveys the levels of ICT literacy among library staff in Nigerian libraries. The questionnaire method was used for this study. The data, collected on a self-assessment basis, covered 18 Nigerian university libraries. It shows that Nigerian university libraries, which form the basis of knowledge for the country, do not have professional librarians whose skill-set is adequate to meet the ICT applications which are indispensable for the acquisition, organization, provision and dissemination of knowledge. Library management, for its part, should acknowledge the wide-ranging benefits of both ICT and raise levels of ICT literacy for university libraries and their mother institutions.

Hoskins (2005) investigates the ICT knowledge and skills of subject librarians at the university libraries of KwaZulu-Natal. A study population of 43 subject librarians, in the university libraries were surveyed by means of a mailed questionnaire to establish in what ways subject librarians were using ICTs, what the level of ICT knowledge and skill was amongst the subject librarians, what problems the subject librarians faced in the use of ICTs and what their ICT training needs were. Interpretation of the results revealed a low level of ICT knowledge and skill amongst subject librarians and a general lack of formal training for ICTs amongst the subject librarians. The findings of the study showed that subject librarians generally do not have the
knowledge to explore and take advantage of the opportunities technology creates, nor did they have the skill or ability to perform the applications functions and operations described above effectively. By identifying the problems that subject librarians face in the use of ICT, it is evident from the findings that the majority of these problems were as a result of a lack of understanding, knowledge, skill, and a lack of training. The author suggests that Library schools should provide a curriculum that is balanced so that it provides for an education in traditional librarianship as well as ICT knowledge.

Obioha (2005) identifies the role of ICT in information seeking and use amongst research officers in Research Institutes in Nigeria. The study examines awareness, use, exposure to ICT; role of ICT and improvements on ICT tools. It shows that ICT plays an significant role in information sourcing, generation, processing, storage, retrieval, dissemination and also entertainment. It also proves that for ICT to be used maximally there is need to have regular power supply, stable infrastructure and provision of more ICT tools and centres.

Obajemu (2006) reports a survey of 84 participants at the Cataloguing, Classification and Indexing Group of the Nigeria Library Association Workshop in 2004 to determine the impact of the annual
workshop on the application of information and communications technologies (ICT) to cataloguing and classification in Nigerian libraries. The work covers 43 libraries, universities, and polytechnics, colleges of education, research institutes and ministries in Nigeria. The data analysis shows that the workshops had encouraged the participants to further pursue ICT. The findings also reveal that the workshops had positive impact on the participants with respect to the application of ICT to cataloguing and classification.

Adeyoyin (2006) reports a survey conducted among the professionals, paraprofessionals and other members of staff of 28 university libraries in West Africa to ascertain the information and communication technology (ICT) literacy level among the staff of English-speaking university library staff and their counterparts in French-speaking university libraries. The results show that out of about 370 professional librarians, only 179 of them were ICT literate while the remaining 191 professional librarians were ICT non-literate. Also, out of 526 paraprofessionals, only 84 of them were ICT literate while the remaining 442 were ICT non-literate. Some of the findings were that; there was a need for knowledge acquisition among the librarians in Nigerian university libraries to be able to offer efficient services in the emerging ICT era and that the ICT literacy among the librarians was low and
hands-on practical experience was lacking among the librarians in some cases. The application of information and communication technology in West African university libraries and their subsequent use require that these technologies should become part of library staff training.

Jange and Samy (2006) evaluate the use of the Internet as an information source by libraries of National Institutes of Technology in India. Using the questionnaire method data is collected from seventeen National Institutes of Technology spread across the country. Some of the main objectives of the study are to understand the perceptions of Internet technology by library professionals, to identify the purpose of using Internet by library, and to explore the use of Internet services and its impact on library activities and services. It is observed that all the libraries perceive Internet as a communication tool and see it as a supplement to the online library. Among the Internet services, email, online databases and WWW are the most frequently used Internet services by the librarians. The results indicate that, the libraries make use of Internet mainly for identifying latest books and journals in acquisition and serials control activities of library. Search engines are the ultimate mode of searching information and colleagues assist in getting the desired information. The results indicate that the libraries of NIT accept the significance of Internet in library activities
and services. The librarians have to reorient themselves, and adopt the new technology to generate services and resources where skills of structuring and organizing resources are put to its best use.

**Nath, Bahl and Kumar (2007)** reports a survey of librarians of Chandigarh city to assess the ways in which librarians use ICT’s, their level of knowledge and skills, problems faced in the use of ICT’s and their training needs. The study also investigates the extent of adoption of ICT in Chandigarh city libraries as modern tools of providing library service to users. A questionnaire was used to survey the ICT skills and knowledge of librarians with 9 sections on respondent’s background, file management, word processing, spreadsheets, databases, presentations, E-mail and Internet. Survey of 21 academic and public libraries reveal a low level of ICT knowledge among librarians and a general lack of formal training among the academic librarians. The study recommends library education with a balanced curriculum including both traditional as well as ICT knowledge and skills.

**Ramesh Babu, Vinayagamoorthy and Gopalakrishnan (2007)** reports a survey of the ICT skills among librarians in engineering educational institutions in Tamil Nadu. The main objective was to identify
the types of ICT skills possessed by the librarians, assess the level/extent of different types of ICT skills, the means of acquiring ICT skills, and identify the constraints in acquiring ICT skills by the librarians. The knowledge in ICT relates to operating systems, packages and programming languages, library automation software, web awareness, knowledge of online facilities/services, and also technical skills and managerial skills. The results show that the librarians of these institutions are acquiring considerable basic skills in ICT. However, they need to concentrate more on network-based services and digital library services.

Safahieh and Asemi (2008) assess the computer literacy skill of librarians in Isfahan University of Iran. The factors studied also include Librarians' computer use experience, extent of computer literacy, software used, purpose of computer use in their day to day work, benefits derived from computer usage and problems faced in effective use of computer. A questionnaire survey of 73 librarians (41 returned) was used to collect data on computing skills of librarians and their use of Microsoft word, excel, access, power point, library software etc. Data analysis reveals that a majority of the respondents considered their level of computing skills as fair. In contrast, only few of the respondents had good computing skills. Majority
of the participants are professional librarians with more than six years of experience. The results also indicate that majority of the librarians have acquired their computer skill through informal channels. Library software is the most commonly used software among librarians and the less used software was database management software. The most common problem cited in computer usage was frequent breakdown of system, electric power failure, inadequate computers in the libraries and librarians’ inadequate computer skill. The study recommends the management of the university libraries to organize training programs to educate librarians with the latest advancement of information technology.

Ademodi and Adepoju (2009) report a study of academic librarians in Nigeria. The aim of the study was to determine whether academic librarians in selected Nigerian states possess computer skills and competencies in the use of computer. Thirty questionnaires were administered to respondents in the academic libraries under study. The study finds that the academic libraries in these states have very few computers and these computers are used more for administrative duties and Internet browsing than library routines. Most of the librarians are computer literate, but have no computers to use. The rate of computer skill and competence is low. The study recommends that librarians must be properly trained to
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acquire computer skill and more attention and funds should be committed to training and procurement of ICT infrastructure in Nigerian university libraries.

Adeyinka (2009) examines the attitudinal correlates of some selected Nigerian librarians towards the use and application of ICT in various libraries. A total of 41 librarians from automated libraries in the Oyo state of Nigeria formed the study’s population. The survey instrument used for the collection of data was a computer anxiety and attitude towards microcomputer utilization (CAATMU) scale and a librarian attitude questionnaire. The main objective of the study was to find relationship between demographic variables of respondents, age, gender, prior knowledge / experience and training, educational qualification, computer anxiety and librarians attitude towards ICT. The analysis of results show that all the four out of the five variables age, gender, educational qualifications and knowledge of ICT significantly correlate with librarian attitude towards ICT; while the variable ICT anxiety correlate negatively with the attitude of librarian towards ICT. The study emphasizes the need for libraries to embark on training their librarian who does not have knowledge of ICT.
Mohamed Haneefa and Shukoor (2010) reports the Information and Communication Technology (ICT) literacy among the library professionals of Calicut University. The study includes only the library professionals in the central library and departmental libraries of Calicut University. A structured questionnaire was used to collect data. The study reveals that the Professional Assistants are more ICT proficient in ICT skills than the Junior Librarians and Assistant Librarians. The use of ICT-based resources and services, library automation software, and general purpose application software is high among the Junior professionals than the senior library staff. The use of digital library and institutional repository software is very low among the library professionals. Majority of the professionals had confidence in routine ICT and Internet tasks, and need training or orientation in library automation, digital library and institutional repository software.

Sivakumaren, Jeyaprakash, Gopalakrishnan and Geetha (2011) This paper examines the various attitudes of library professionals on ICT in the libraries. The questionnaire method was used to collect data from the respondents working in universities and colleges. The data were collected from 55 respondents out of 71 respondents. The study found that the majority of library professionals have positive attitude on ICT and some of them were not able to update their knowledge and skills on ICT. The study
has further recommended for ICT based programmes to train the library professionals.

**Eguavoen (2011)** This survey study examined the attitudes of library staff to the use of ICT in Kenneth Dike Library. The sample for this study includes 101 respondents comprising 21 professional librarians, 32 Para-professionals and 48 non professional staff of the library. The study developed and utilized Attitudes of Library Staff to the Use of ICT Scale (ALSUICTS) to elicit information from the respondents. The Friedman test was carried out and Pearson correlation matrix where (df = 39, r.obs = 5, at P<0.05) was used in analyzing the data. The findings showed that generally library staffs in Kenneth Dike Library have a positive attitude toward the use and implementation of ICT and that knowledge of ICT and training influence positive attitudes towards ICT. Based on the findings it is recommended that staff of libraries be trained to allay the fears and anxiety about the use and application of ICT in their respective libraries.

### 2.3 PROFESSIONAL DEVELOPMENT AND EDUCATIONAL NEEDS OF LIBRARY PROFESSIONALS

Efficiency of a library depends to a large extent on the competence of its staff. Hence it is important to assess the library professionals' needs for
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continuing education and professional development in a changing electronic environment of academic library.

**Anwar and Ansari (2002)** report the results of an investigation in current continuing professional development practices, perceptions of academic library employers about the skills to be developed in their staff in six Gulf co-operation council countries. Through mailed questionnaires, data was collected from 15 publicly funded institutions. Analysis shows that a systematic staff development programme was lacking in most of the institutions. ICT skills preferred relates to automated systems, electronic resources, networking and multimedia applications. Writing and research skills relating to measurement and evaluation, studying information needs, and report writing receive higher ranks in the survey.

**Hewitson (2002)** reports results of an investigation, undertaken at Leeds Metropolitan University, to study the awareness and extent to which university academic staff use and assimilate electronic information services (EISs) into their work. The study is based on the findings of a quantitative survey, which addressed four specific areas: the characteristics of the respondents (age, gender, and faculty); the level of the information technology (IT) literacy of staff; the frequency of use by academic staff of different EISs offered by the university; and academic staff’s perception of
student use. The study also investigates how academic staff at the university obtains information for their work and what they do with the information they obtain. The other factors studied include awareness of staff about EISs, the barriers that exist to their use; the extent to which academic staff are integrating the use of EISs into students' educational experience; and what the university can do to support staff better in their use of EISs. It concludes from the results that the internet is the most popular information source but the factors affecting use at the expense of subscription-based services are complex. University staff, especially those with low-level IT skills, frequently uses the internet because it is easy to access and provides instant results. It is clear that members of staff, who used EISs regularly, used it for their own research or after joining some form of professional development such as a PhD.

Khurshid (2003) review job advertisements published in American Libraries (AL) and College and Research Libraries News (C&RL NEWS) to assess the impact of automation and use of IT in libraries on job requirements and required skills of qualifications for catalogers. Analysis reveal that most preferred qualification is a master's degree in library and information science, or in some libraries a master's degree in computer science or relevant field, or a subject master's degree with library
experience. However, major changes are occurring in the skills area. In addition to knowledge of cataloging principles and procedures, the requirements also include familiarity and experience with an integrated library software, one or more bibliographic utilities, basic computer applications, and emerging metadata schemes and tools.

Chan and Auster (2003) explores the extent to which professional development of reference librarians was occurring, based on a survey of 733 professional librarians with reference duties who were working in large, urban public libraries in Ontario. Reference librarians once relied solely on print resources; they can now answer the majority of questions accurately using only Web-based sources. Authors examine those competencies reference librarians were choosing to acquire through formal and informal professional development activities, and explore barriers that might be preventing reference librarians from participating in these activities. In their professional development activities, the most popular topics were related to internet and more than half the respondents studied electronic resources, office applications, integrated library system applications, communication skills and public service skills. Instructional skills and management skills were studied by about 40 percent of the respondents
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Shiholo and Ocholla (2003) outlines the changing trends in the training of information professionals in Kenya based on a literature review representative of popular publications and research reports from 1970 to the current time. The paper gives an insight into Library and Information Studies (LIS) education in Africa. The demand for competency in technology has led to the proliferation of training programs in information technology, leaving out other information areas. There is a need for the development of new programmes and the need for curriculum review that comprises a strong component of information management and IT. Authors stress that information technology, management and user oriented studies (information needs, seeking, interfacing, use and impact) will occupy a central place in LIS education in Kenya. The paper concludes that core knowledge and skills for information providers ought to be reviewed regularly and that support from LIS education stakeholders, such as national library associations and national experts, should be enlisted in determining such requisite skills.

Zhang (2004) uses a questionnaire to assess and identify areas of training and development of library support staff in selected academic libraries in Oklahoma and Kansas. Questions include opinions on the importance of training topics on computer skills, interpersonal skills, and
supervision/management skills that they perceive as important to their job and the importance of library/organizational supports that encourage them to participate in training and development. It is seen that support staff highly rated computer skills like web browsers, MS Office Suites (e.g., word processing, spreadsheet, etc.), e-mail management etc that help their job and oral/written communication, working with difficult people, managing priorities etc as important training topics on interpersonal skills.

Eells and Jaguszewski (2005) reports the study of a task force of the University of Minnesota libraries which developed a list of core information technology (IT) skills that could be expected of all 300 staff including technical services, reference services and stacks maintenance. Once this list was developed, the task force designed and administered an online self-assessment survey to identify the computer skills of library staff. In the study the development of the core competencies and the administration of the assessment are discussed. Authors point out some recommendations for the future, including use of assessment reports and data gathered in the process to develop a training and professional development curriculum focused on the specific identified training needs of staff.

Feret and Marcinek (2005) in a continuation of the Delphi study conducted in 1999 verify the results of the previous study (comparison of the
experts' predictions with the reality as of the year 2005) and assess the competencies that librarians should develop as professional information suppliers and experts, to meet future needs. Closed questions included four main areas: the Internet as a competitor to the library, local versus remote access, printed versus electronic media, staff and user training. New factors identified by the experts (not mentioned in the previous study) include a raise of user's expectations, the Internet tools e.g. Google and other search engines challenging the library etc. Regarding the skills of librarians the expert's opinion was that IT and communication skills are the most important and subject knowledge is as much important as managerial skills. The study also predicts that IT progress and changes in higher education will play a predominant role in shaping the image of future libraries and their important role will be information management and access, teaching, support for research and cooperation.

Gosine-Boodoo and McNish (2005) reports the results of a survey to identify whether the particular country environment of today's professional librarian impacts upon his/her skills capabilities as well as upon his/her access to opportunities for continued development. The satisfaction level of librarians with regard to six recommended skills and characteristics like
communication; training; information technology (IT); managerial; commitment and subject knowledge/profiling was measured. Secondly, professional development opportunities were measured via skills, services and attitudes, key areas also recommended for staff development and training. An important finding of this study illustrates that what significantly contributes to the librarian's overall satisfaction with professional development is the level of competence with his/her skills set. The emerging need for improved IT and managerial skills is important for librarians' professional relevance and progress.

Gosine-Boodoo (2006) investigates Caribbean special librarians to study their demographics, perception of skills satisfaction and opportunities for career development. The study shows that special librarians are multi-skilled in technical, technological and managerial skills and some perform all major library functions in combination with management or IT. Their IT related skills in combination with managerial skills, enable them to function as website, database and e-resource managers. One of the recommendations includes commencing a joint venture between the organization and the individual librarian with the goal of establishing a programme of relevant continuing education and training. Author also suggests the formation of
special interest groups with or without the support of library and information professional bodies or employer organizations.

Kavulya (2007) investigates the types of skills, knowledge and values that are needed by LIS professionals in Kenya if they are to fulfill the current information needs of the society. The survey collects data on the respondents' perceptions on the status of job market for LIS professionals in Kenya, adequacy of current curriculum and training resources in local LIS training institutions, priority areas of training and ICT skills that are critical for information professionals. Respondents were of the opinion that unless steps are taken to improve the quality of LIS training in Kenya, persons from other professional fields will be better placed to perform some information functions than LIS professionals. The study also finds that LIS curriculum should include hardware and software skills, database construction, website development; digitization process; electronic information, internet use and evaluation, information storage and retrieval. Other IT courses identified as useful are electronic publishing, HTML and programming. Author suggests that to provide information services that address specific targets, LIS schools have to select areas to include in the curriculum, depending on the manpower they would like to produce.
Mathew K., Baby, M.D & Pillai S. (2011) The paper aims to bring out the problems and prospects of the professional development opportunities of academic library professionals in the Universities in Kerala. The study is a part of research undertaken to survey the professional development activities and educational needs of library professionals in the major Universities of Kerala because of the developments in Information communication technology. The study recommends methods for improving the knowledge/skills of library professionals. The aim of the study is to evaluate the professional development activities of Library professionals and their attitude towards continuing education programmes. In order to achieve the objectives of the study a survey was conducted with the help of structured questionnaires distributed to 203 library professionals in seven major universities in Kerala, (South India) of which 185 questionnaires were returned. Results of the analysis show that majority of the professionals have pursued higher degrees in library science or IT allied courses after entering the profession, and that they have a positive attitude towards participation in training programmes and workshops. The results show that developments in ICT have a positive influence on majority of library professionals’ attitude towards continuing education programmes.
2.4 Conclusion

The survey of literature has given an insight into the research carried out in the related fields of study. Further, it has helped to know the tools and methods relevant for the study. Majority of the studies are conducted with the help of questionnaire survey and personal interview. The literature survey has also revealed that most of the ICT related studies are conducted abroad. In India there are comparatively few studies related to ICT applications and professional development of library professionals. The pace of developments in ICT in the field of library and information science is rather slow when compared to other sectors. It is clear that technological change clearly affects library staff and there is a need to develop guidelines and policies to train the professionals in providing frontline services in academic libraries.
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