

Information Communication Technology (ICT) Skills among LIS Professionals working in Special Libraries in Karnataka

By

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Abstract

Purpose – This study was conducted to investigate the Information Communication Technology (ICT) Skills among LIS Professionals working in Special Libraries in Karnataka.

Design/methodology/approach – The following methods were used to collect data for the study: questionnaire survey of LIS Professionals, semi-structured interviews with LIS Professionals, and observational visits in the libraries.

Findings – The analyses revealed that though the LIS Professionals had hardware, software, and communication facilities to some extent.

Originality/value – The study provides recommendations to enhance library automation and effective and efficient application of ICT.

Keywords: Communication Technologies, Information Technology, Library Automation, Special libraries, ICT Skills and Competencies

Introduction

Availability of the information is very much important for the users to updating their knowledge. Development in Information and communication technology has made greater impact on print media. In 1990's CD-ROM Technology emerged as a tool, storing vast amount of data in a small optical disc and has inroads into library and information centers. The information explosion has opened up electronic information to the masses. Latest developments of Information Technology contribute to the significant improvement in the library services. Information Communication

and Technology developments tremendously improved the types of information handling. A mix of tools and procedures to ICT facilitate generation, acquisition, storage, organization, retrieval, searching, viewing, updating and transmission of information using electronic data.

Some of the methods involved in ICT are databases, programming languages, computer programs, communication networks, artificial intelligence, knowledge bases, etc. Information Communication Technology influences most of the human activity in daily life. Past two decades libraries has seen dependent increasingly on the revolutionary impact of developments in ICT on their key functions. It provides easy and instantaneous access to data information. It gives more chances to libraries for widening the scope of their resources and services to develop their existence in the organization.

Rapidly growing of information in machine readable form helps requirements of library readers to be satisfied with the involvement of libraries. Even vast information is investigating for the application of ICT in libraries; our study tries to focus on ICT skills among LIS professionals working in special libraries in Karnataka. ICT developments have led to made changes in almost all field. The improvements identified as information society, information age, digital age and information superhighway. Movements in the ICT over the world, and its influence were on our day to day life and each area of knowledge.

Present scenario, library has grown in the context of study resources, furniture, space, staff, users, etc. Due to information explosion and rapid developments in ICT, library resources are shifting from print to machine readable and now web media. In addition to, there is change in the need, requirement and interest of the readers. Hence, there is a dramatic change in the role of library and information science professionals. To fulfill the overall demands of the readers, LIS professionals have to do many jobs in the rapidly changing Information Technology environment.

The role of LIS Professionals has changed rapidly in recent years in response to new forms of information technology and new methods of teaching and learning. Thus ICT based special libraries have created virtual environment in the modern digital environment. The present study

describes about the Information communication technology skills among the LIS Professionals working in special libraries in Karnataka.

Review of Literature

The Research in Library and Information Science can help to understand the mechanism of information transfer and to improve this process both in quality and in quantity. The review of literature assesses not only the length and breadth of the topic of research but also vastness and depth of the subject itself. This will also help in identifying the gaps in the research. The application of ICT has created new library models like digital libraries, virtual libraries and digital repositories which are aimed to knowledge sharing online. The impact of ICT has been evident in railway, air reservations, banking and insurance sectors, postal services, biotechnology, health care, telemedicine, media and communications, teaching, learning, library and information services, printing technology, e-resources, digitization of documents, digital library, library networking, e-commerce and trade, etc. The past studies dealing with application of Information Communication Technology in modern institutions in general and development of Information Communication Technology skills among modern library professionals are presented in this chapter under the following headings namely:

- ✓ ICT in Libraries
- ✓ ICT based library resources & services,
- ✓ ICT Skills of LIS Professionals
- ✓ ICT and Special Libraries
- ✓ Educational and Professional Development of LIS Professionals

Researcher has made an elaborative review of literature available on this topic using sources like LISA, Internet, research articles, journals, theses, primary and secondary sources published during the past two decades. Since focus of literature review is to summarize and synthesize the arguments and ideas of others that has already been written on this topic, related literature has been listed as below.

Ahmad & Ahmad (2012). Author conducted survey on Information and Communication Technology offer to the students a wide range and outlook. This topic was selected as the focus

of this study, which concluded that LIS students believe that ICT' has eased their learning and its use is useful to make LIS education more striking, however, the lack of e-resources, trained ICT staff, and weak networking is still a serious constraint. In this age of technological advancement, LIS students also use Internet search engines and web pages for acquiring the required information, but another important fact is that, most of the Library and Information Science students are less satisfied from the available ICT facilities. The improvement of such factors will go a long way towards improving the use of information communication technology in the libraries in future.

Al-Ansari (2011). Author studied the application of information technology in various operations and services in special libraries in Kuwait. The data were collected through a questionnaire accompanied by interviews with head librarians in 25 special libraries in Kuwait. This study provides baseline data on the current status of the application of information and communication technology. The majority of the libraries are partially automated. The library catalogue was found to be the most popular area for automation. More than one fourth of the libraries are still using manual systems in their library operations and services. Lack of adequate personnel, ICT training programs, and low priority of libraries within their organization are major obstacles for ICT application in special libraries. This paper will have implications for the development of special libraries in Kuwait. It also indicates existing obstacles, difficulties, suggestion and recommendations for further development. It is the first study of the status of ICT applications in special libraries in Kuwait.

Statement of the problem

A Survey of literature reveals that, LIS Professionals are the most developed strata among the special library. The responsibility is thrust on these libraries to function effectively as active research and development instrument in modern research and development. Very few research/study were carried out in this area.

The studies conducted so far, focus on the available library facilities in special libraries, and no comprehensive study was undertaken to critically evaluate the ICT Skills of LIS Professionals in Special Library.

The problem taken for the study is **“Information and Communication Technology (ICT) Skills among the LIS Professionals working in Special Libraries in Karnataka”**.

Need of the study

In a developing country like India, it becomes necessary to recognize the currently existing ICT infrastructure and developments. Studies conducted so far reveal that, it is important for LIS Professionals not only to be well equipped with qualities like motivation, morale and zeal, also to have competent ICT skills to face the new technological challenges. Information and knowledge have increased importance in the contemporary globalized economy. Progress in ICT has led to vast amount of information to circulate at higher speed and lower costs. It is being observed that, the need for ICT skills has an influence on LIS Professionals. Evolutions of the digital resources and ICT have become basic ingredients in the operations of libraries, and the education sector in general. It is very difficult for libraries to acquire and make available information to their readers in print form due to information growth and scattered use of digital information resources. Besides, electronic information sources (EIS) are becoming more popular with users, who find them rewarding and preferred over the print sources. Effective usage of ICT in libraries helps the functions and services effectively for the users.

The review of literature shows that, studies on these issues have been conducted in general and not in particular like **“Information and Communication Technology (ICT) Skills among the LIS Professionals working in Special Libraries in Karnataka”**. Adequate studies have not been conducted in this area to identify the constraints and to suggest measures for continual improvement.

The study intends to project the competency of LIS Professionals with ICT Skills in providing information services to the user community and tries to bring out the factors affecting the lack of ICT skills among the LIS Professionals and semiprofessionals including LIS Apprentice Trainees. There is need to know the level or competency of ICT skills of LIS Professionals, particularly in special libraries. It is appropriate to find out the ICT skills of the LIS Professionals working in special libraries in the modern digital environment. This study is required not only to identify the lacunae, but also to find out the solutions to improve the quality

of services of the library and LIS Professionals. Hence the researcher chose **“Information and Communication Technology (ICT) Skills among the LIS Professionals working in Special Libraries in Karnataka”**.

Significance of the Study

The shift from print to digital information has a high impact on all components of the special library system in India, especially the users, the services and the staff. Though information is considered as an important resource, the use of ICT tools to collect and disseminate information has been slow pace in majority of the special libraries. This may be due to various factors like insufficient funds, inadequate staff trained in handling computers and software packages, administrative concerns, etc. The application of ICT has changed the type of services delivered through special libraries in the state, but a dynamic change is not yet reflected in the infrastructure and manpower development in the special libraries and the whole of library profession.

Most of special libraries are not full-fledged in terms of implementing ICT based applications in their services, but there has been an obvious change in the attitudes of LIS Professionals towards ICT application. To meet the demands for individual and collective information of the user community, the constant improvement of the professional performance of those who provide information is very important. To develop in this direction, there is a need for training to gain a comprehensive perception of the role of computers and communication technology.

There are not much studies conducted about the effects of information communication technologies on the professional activities of LIS Professionals working in special libraries in Karnataka. It is important to evaluate the progress in ICT had any impact on the LIS Profession in these special libraries. Hence, this study is considered relevant to assess the infrastructure of special libraries in Karnataka, the professional development of LIS Professionals, their skills and expertise in handling ICT and also the educational needs of LIS Professionals.

The study stresses the urgent need for administrators and library educators to evaluate the effectiveness of present day library education in moulding the LIS Professionals to meet the demands of future information work. It is the responsibility of the employers to provide

opportunities for LIS Professionals to update their skills, knowledge and competencies to keep pace with the rapidly changing environment of special libraries.

Scope and Limitations of the study

If LIS Professionals are to use the new technology, they must possess IT knowledge and ICT skills too. The scope of the study encompasses the ICT skills of the LIS Professionals working in special libraries in Karnataka State. The present study is intended to cover LIS Professionals, Semi-professionals including LIS Apprentice Trainees working in special libraries in Karnataka State. The study will mainly focus on the Information Communication Technology Skills of the LIS Professionals working in special libraries in Karnataka State.

The usual limitations of the survey method and case study, namely time, human inadequacies, resource constraints, recollection and communication were experienced by the researcher. It was practically not possible to contact all the LIS Professionals in person due to time constraint, unavailability during the period of survey. Though online survey was sent via email to each LIS professional individually, and some of the libraries visited directly to collect data from the respondents. Due to technical constraints, some have not taken the survey.

However the study has following limitations.

- a. The study is limited to selected special libraries in Karnataka state only.
- b. The study includes only Research and Development Libraries, Government Libraries, Business, Trade and Industry Libraries, Socio-Economic Development Research Libraries, Media Libraries, Hospital Libraries, Children Libraries, Blind, Physically Challenged Libraries and Autonomous Libraries in Karnataka.
- c. The study covers only LIS professionals, Semi-Professionals including LIS Apprentice Trainees working in some selected special libraries in Karnataka State.
- d. Finally, among various aspects of LIS Professionals, the study is limited to ICT Skills only.

Objectives of the study

The main aim of the study is to know ICT skills among LIS Professionals, which includes semi-professionals, LIS Apprentice Trainees of the particular designated

libraries. To determine the nature of training and orientation is needed for the LIS Professionals to handle information technology infrastructure for the provision of effective information services. Keeping these in mind, the following objectives have been frames.

The study proposes to focus:

1. To carry out study of ICT infrastructure of special libraries in Karnataka.
2. To assess the availability and use of certain ICT applications in the selected special libraries in Karnataka.
3. To evaluate the ICT skills possessed and constraints faced in acquiring the ICT skills by LIS Professionals.
4. To study the nature of training required for LIS professionals to update or improve their knowledge on ICT Skills.
5. To study about the reasons and impact on improving ICT Skills of LIS Professionals working in special libraries in Karnataka through attending training programmes.

Hypothesis

A hypothesis assumes relations variables with a tentative explanation for research and the researcher has a general, diffused and sometimes confused thinking about the problem. It may take more time for the researcher to know what he wants to do. Hence the research problem is to be started properly as mentioned below:

1. ICT infrastructure facilities in most of the Special Libraries in Karnataka are poor for rendering advanced ICT based resources and services.
2. There is a lack of knowledge on ICT Skills among LIS Professionals working in Special Libraries in Karnataka.
3. LIS Professionals working in Special Libraries in Karnataka need more exposure and training in ICT Skills to render ICT based information resources and services.
4. LIS Professionals working in Special Libraries in Karnataka face constraints in acquiring ICT Skills due to various reasons.

Methodology

Researcher has chosen the survey method of research to collect data from the LIS Professionals working in special libraries in Karnataka. An appropriate customized Questionnaire tool was

designed to collect the data of individual LIS professionals working in special libraries in Karnataka. The researcher had put in continuous efforts to see that, the LIS professionals of even remotely located special libraries took the online survey (E-Mail). Due to time constraint, the researcher personally visited some of the special libraries in order to obtain additional data and information through observation of available ICT infrastructure and also informal discussions were held with the LIS professionals. Some of the questionnaire was administered and collected in person and some by via email.

Questionnaire for LIS Professionals

Pre designed questionnaire with open ended and closed ended questions to collect relevant data to evaluate the ICT Skills among LIS Professionals working in special libraries in Karnataka. And also it is intended to collect data regarding nature of training required for LIS Professionals to improve their ICT Skills and knowledge as opined by LIS Professionals working in special libraries in Karnataka. Due to time constraint, 206 (98.09 percent) of the LIS Professionals responded to the survey out of 210 Questionnaires were distributed in the LIS Professionals category.

Conclusion

The present age is considered as information age. The knowledge and information needs of the present clientele cannot be satisfactorily and effectively meet through books and periodicals alone. A lot of information in this computer age is produced and presented in other than the conventional forms. Thus, the non-conventional rather non-book materials do contain a considerable quantity of knowledge and information. To do so, the well-equipped library must have access to the mediated information contained in non-book materials, retrospective and latest literature on technical, other related sciences, advanced ICT infrastructure and well trained, skilled, qualified, and competitive LIS Professionals. Role of LIS Professionals working in the special libraries in Karnataka state is very important in managing and developing the library.

As an observation made, special libraries have less number of LIS Professionals at higher level. Majority of the LIS Professionals are belong to the cadre of Library Assistants. Thus it is suggested to recruit professionally qualified LIS Professionals to improve the quality of service

effectively and efficiently. Majority of the higher level LIS Professionals must be given a specialized training at least once in two years.

In Karnataka state, there are many Universities, Colleges, Medical, Engineering, Research and Development Centres which are conducting training programmes, refresher courses, Faculty Development Programmes (FDP) for their staff. But most of these are general in nature. So it is suggested to come forward for special libraries to take initiation to organize advanced training programmes, refresher courses, managerial competencies, especially for LIS Professionals working in the special libraries.

Hence, it is a prerequisite condition that, LIS professionals to be aware of the recent trends in information services. Further, the LIS Professionals need to be trained on modern lines so as to enable them to install and extend ICT based information services. On account of this trend, it is found essential that, special libraries have the library advisory committee to oversee the functioning of library and to improve upon the services on continual basis to meet the needs of the students, faculty and other users. The library committee helps in judicious allocation of budgets, acquisition of need based information sources, development of infrastructure facility and deputation of staff for acquiring knowledge and skills. The committee will also recommend for improvements from time to time based on the feedback analysis report. On the other hand they have to impart knowledge and train their users in using ICT facilities and accessing various online information services. In this direction, the librarians of special libraries have to play two major roles. One in knowing the information sources and the other in establishing rapport with user community of their libraries. Here librarian is expected to bridge the gap with the thorough knowledge of ICT.

Designation Wise Distribution of LIS professionals

It is depicted from the below mention table that, the distribution of LIS Professionals for the survey with respect to their designation. It is found from the below table that, a maximum of 35.92 percent(74) of the respondents belong to the cadre of Library Assistant, followed by 33.98 percent(70) of the respondents belong to the cadre of Assistant Librarian. Out of the 206 respondents, 16.80 percent(34) belong to the cadre of Library Trainee, followed by 04.85 percent(10) of the respondents belong to the cadre of Junior Research Assistant. Very minimum

of 0.77 percent(02) of the respondents belong to the cadre of Deputy Librarian, Senior Principal Officer and Librarian.

Designation	Frequency	Percentage
Assistant Library Officer	70	33.98
Library Assistant	74	35.92
Library Trainee	34	16.50
Senior Technical Officer	6	2.91
Technical Officer	6	2.91
Junior Research Associate	10	4.85
Deputy Librarian	2	0.97
Senior Principal Scientist	2	0.97
Librarian	2	0.97
Total	206	100.00

Category Wise Distribution of Libraries

It is found from the below table that, a maximum of 46.60 percent(96) of the LIS Professionals belong to Research and Development Libraries, followed by 21.36 percent(44) of the respondents belong to Government Libraries. Out of the 206 respondents, 6.80 percent(14) belong to Business, Trade, Industry and Socio-Economic Change Libraries. Very minimum of 3.88 percent(08) and 1.94 percent(04) of the respondents belong to Blind, Physically Challenged and Media Libraries.

Category	Frequency	Percent
R&D	96	46.60
Government	44	21.36
Business, Trade & Industry	14	6.80
Socio Economic Research Development Libraries	14	6.80
Hospital Libraries	10	4.85
Media Library	4	1.94
Autonomous Lib	16	7.77

Blind psychologically challenge	8	3.88
Total	206	100.00

Gender wise distribution of LIS Professionals

The below table give the details about the gender. Among the questionnaire received back with the complete information, male respondents were 72.82 percent(150) of the total population ,followed by 27.18 percent(56) belong to female category.

Gender	Frequency	Percent
Male	150	72.82
Female	56	27.18
Total	206	100.00

Age wise distribution of LIS Professionals

The below table is gives the detail about the age group of the LIS Professionals. Among the surveyed respondents, more respondents were young with 29.13 percent (60) under 30 years age group, followed by 28.16 percent (58) belongs to age group of 31-35 years. Next to this, 13.59 percent(28) belong to the age group of 41-45 years.12.62 percent(26) of the LIS Professionals belong to the age group of 46-50 years. Very less 7.77 percent(16) of the total LIS Professionals belong to senior age group of above 50 years.

Age	Frequency	Percent
Below 30	60	29.13
31-35	58	28.16
36-40	18	8.74
41-45	28	13.59
46-50	26	12.62
Above 50	16	7.77
Total	206	100

Qualification wise distribution of LIS Professionals

It is found from the below table that, a maximum of 73.79 percent(152) of the respondents have PG Degree Qualification, followed by 12.62 percent(26) of the respondents have the

qualification of UG Degree. Next to this, 9.71 percent (20) of the LIS Professionals have the higher qualification of M.Phil Degree. Only 3.88 percent (8) of the respondents have the highest degree of Ph.D. in Library and Information Science. It is inferred from the table that, most of the respondents have the qualification of PG Degree in Library and Information Science.

Qualification wise distribution of LIS Professionals

Qualification	Frequency	Percent
UG	26	12.62
PG	152	73.79
M Phil	20	9.71
Ph.D.	8	3.88
Total	206	100.00

Experience wise distribution of LIS Professionals

It is found from the below table that, 30.10 percent (62) of the LIS Professionals have the experience of less than 05 years, followed by 24.27 percent (50) of the respondents also have the experience of 6-10 years. Next to this, 14.56 percent (30) of the respondents have the experience of 21-25 years. 12.62 percent (26) of the respondents have the experience of 11-15 years. 10.68 percent (22) of the respondents have the experience of 16-20 years. Very low 7.77 percent (16) of the respondents have the rich experience of more than 25 years of service. The acquisition of work experience is one of the skills to solve the problems.

Experience	Frequency	Percent
Below 5 years	62	30.10
6-10	50	24.27
11-15	26	12.62
16-20	22	10.68
21-25	30	14.56
Above 25	16	7.77
Total	206	100.00

Proficiency rate on Information Technology Components

It is found from the below table that, the hardware skills among the LIS Professionals are quite impressive. A maximum of 59.02 percent(122) of the respondents are very good in use of computers in their work spot, followed by 53.4 percent(110) of the respondents are very good in use of Laptop in their workplaces. Next to this,41.7 percent(86) of the respondents are also very good in use of Photocopy Machine in their libraries.39.8 percent(82) of the LIS professionals are also very good in use of Scanners.29.1 percent(60) of the respondents are also very good in use of Mobile Communication with Computers.27.2 percent(56) and 25.2 percent(52) of the respondents are very good in use of Digital Camera and Multipurpose Computers in their designated libraries.18.4 percent(38) and 15.5 percent(32) of the LIS Professionals are also very good in use of Fax Machine and iPods in their work spot.

IT Components	Very Good	Good	Satisfacti on	Poor	Very Poor	Not Aware	Total
Use of Computers	122(59.2)	68(33.0)	8(3.9)	2(1.0)	4(1.9)	2(1.0)	206(100)
Use of Laptop	110(53.4)	52(25.2)	10(4.9)	14(6.8)	8(3.9)	12(5.8)	206(100)
Use of Ipod	32(15.5)	52(25.2)	40(19.4)	10(4.9)	30(14.6)	42(20.4)	206(100)
Use of Photocopy Machine	86(41.7)	58(28.2)	32(15.5)	4(1.9)	22(10.7)	4(1.9)	206(100)
Use of Digital Camera	56(27.2)	62(30.1)	36(17.5)	16(7.8)	18(8.7)	18(8.7)	206(100)
Use of Fax Machine	38(18.4)	54(26.2)	36(17.5)	12(5.8)	34(16.5)	32(15.5)	206(100)
Use of Mobile Communication with Computers	60(29.1)	70(34.0)	24(11.7)	12(5.8)	12(5.8)	28(13.6)	206(100)
Use of Multipurpose Computers	52(25.2)	76(36.9)	34(16.5)	18(8.7)	12(5.8)	14(6.8)	206(100)
Use of Scanners	82(39.8)	66(32.0)	36(17.5)	10(4.9)	6(2.9)	6(2.9)	206(100)
If any other Please Specify:							

Figures in the parentheses show the percentage

Proficiency rate on Software

The information and communication technology skills among LIS Professionals and the level of competency in all the software skills are related by the respondents are tabulated. Among the software management skills, 64.1 percent(132) of the respondents are very good in use of Web Browser, followed by 63.1 percent(130) of the respondents are very good in use of E-Mail. Next to this, 62.1 percent (128) and 60.2 percent (124) of the respondents are very good in use of MS-Word and MS-Excel. 57.3 percent(118) and 47.6 percent(98) of the LIS Professionals are very good in use of MS-PowerPoint and Document Reader(Ex:Adobe Acrobat) in their libraries. 28.2 percent(58) and 27.2 percent(56) are very good in use of Windows 2013 and Windows XP respectively in their workplace. 26.2 percent(54) and 25.2 percent(52) of the respondents are also very good in use of Statistical Packages and Use of Word Processing in their libraries. 24.3 percent(50) and 21.4 percent(44) of the LIS Professionals have very good knowledge on Use of File Conversion and Installation of Library Automation Software in their designated libraries. 20.4 percent(42) and 19.4 percent(40) of the respondents have very good knowledge on Installation of Operating System and Graphical Presentation in their workplace. 18.4 percent(38) and 16.5 percent(34) of the LIS Professionals have very good work knowledge on Use of File Bibliographic Conversion, Linux and Mac Operating Systems respectively in their libraries. 14.6 percent(30) and 13.6 percent(28) of the LIS Professionals are very good in Use of Tabulation and SQL in their libraries. 12.6 percent(26) and 11.7 percent(24) of the respondents are very good in Installation of Digital Library Software, Windows NT and DBMS. 10.7 percent(22) and 8.7 percent(18) of the LIS Professionals are very good knowledge on HTML\ XML editors and UNIX respectively in their work spot. 7.8 percent(16) and 6.8 percent(14) of the respondents are very good knowledge about in use of Oracle and Novel Netware in their designated libraries. Very few, 4.9 percent(10) of the LIS Professionals are also very good work knowledge on use of animation in their workplace.

Software Skills	Very Good	Good	Satisfaction	Poor	Very Poor	Not Aware	Total
Installation of Operating System	42(20.4)	64(31.1)	26(12.6)	12(5.8)	20(9.7)	42(20.4)	206(100)
Installation of Library Automation Software	44(21.4)	68(33.0)	28(13.6)	18(8.7)	14(6.8)	34(16.5)	206(100)
Installation of Digital Library Software	26(12.6)	70(34.0)	30(14.6)	28(13.6)	12(5.8)	40(19.4)	206(100)

Windows 2013	58(28.2)	28(13.6)	30(14.6)	18(8.7)	16(7.8)	56(27.2)	206(100)
Windows NT	26(12.6)	30(14.6)	28(13.6)	32(15.5)	14(6.8)	76(36.9)	206(100)
Windows XP	56(27.2)	40(19.4)	20(9.7)	28(13.6)	14(6.8)	48(23.3)	206(100)
Linux	34(16.5)	36(17.5)	42(20.4)	14(6.8)	26(12.6)	54(26.2)	206(100)
Novel Netware	14(6.8)	16(7.8)	30(14.6)	20(9.7)	40(19.4)	86(41.7)	206(100)
Unix(Specify)	18(8.7)	20(9.7)	24(11.7)	30(14.6)	22(10.7)	92(44.7)	206(100)
Mac OS	34(16.5)	16(7.8)	32(15.5)	20(9.7)	34(16.5)	70(34.0)	206(100)
MS-Word	128(62.1)	58(28.2)	6(2.9)	4(1.9)	4(1.9)	6(2.9)	206(100)
MS-Excel	124(60.2)	62(30.1)	6(2.9)	4(1.9)	4(1.9)	6(2.9)	206(100)
MS-PowerPoint	118(57.3)	48(23.3)	16(7.8)	4(1.9)	4(1.9)	16(7.8)	206(100)
Document Reader(Ex:Adobe Acrobat)	98(47.6)	68(33.0)	10(4.9)	4(1.9)	8(3.9)	18(8.7)	206(100)
E-Mail	130(63.1)	52(25.2)	4(1.9)	2(1.0)	6(2.9)	12(5.8)	206(100)
Web Browser	132(64.1)	38(18.4)	8(3.9)	2(1.0)	6(2.9)	20(9.7)	206(100)
Statistical Packages	54(26.2)	14(6.8)	26(12.6)	42(20.4)	8(3.9)	62(30.1)	206(100)
Graphical Presentation	40(19.4)	28(13.6)	32(15.5)	22(10.7)	20(9.7)	64(31.1)	206(100)
HTML\ XML editors	22(10.7)	46(22.3)	32(15.5)	14(6.8)	18(8.7)	74(35.9)	206(100)
DBMS	24(11.7)	48(23.3)	36(17.5)	12(5.8)	18(8.7)	68(33.0)	206(100)
Oracle	16(7.8)	22(10.7)	26(12.6)	28(13.6)	30(14.6)	84(40.8)	206(100)
SQL	28(13.6)	16(7.8)	42(20.4)	20(9.7)	28(13.6)	72(35.0)	206(100)
Use of Word Processing	52(25.2)	40(19.4)	30(14.6)	10(4.9)	14(6.8)	60(29.1)	206(100)
Use of File Conversion	50(24.3)	40(19.4)	34(16.5)	6(2.9)	16(7.8)	60(29.1)	206(100)
Use of File Bibliographic Conversion	38(18.4)	24(11.7)	38(18.4)	24(11.7)	14(6.8)	68(33.0)	206(100)
Use of Tabulation	30(14.6)	26(12.6)	44(21.4)	18(8.7)	20(9.7)	68(33.0)	206(100)
Use of Animation	10(4.9)	24(11.7)	36(17.5)	28(13.6)	30(14.6)	78(37.9)	206(100)
Any Other (Please Specify)							

Figures in the parentheses show the percentage

Proficiency rate on Library Automation Software

It is found that the knowledge of using library automation software among the LIS Professionals were remarkable. It is inferred from the table that,41.7 percent(86) of the respondents have the very good work knowledge on Libsys in their worplace, followed by 21.4 percent(44) of the LIS Professionals have the very good work knowledge on Koha in their designated libraries. Next to this, 12.6 percent(26) and 11.7 percent(24) of the respondents have the very good work knowledge on Newgenlib and Libsoft respectively.9.7 percent(20) of the LIS Professionals have the very good work knowledge on Winisis in their work spot.5.8 percent(12) of the respondents have the very good work knowledge with In House Developed library automation softwares.2.9 percent(06) and 1.9 percent(04) of the LIS Professionals have the very good work knowledge on SLIM++,Sanjay and Limsoft in their designated libraries.Vey less,1.00 percent(02) of the respondents have the very good work knowledge on VTLS in their work spot.

Library Automation	1	2	3	4	5	Not Aware	Total
LIBSYS	86(41.7)	26(12.6)	16(7.8)	10(4.9)	12(5.8)	56(27.2)	206(100)
WINISIS	20(9.7)	44(21.4)	18(8.7)	10(4.9)	16(7.8)	98(47.6)	206(100)
SLIM++	6(2.9)	20(9.7)	18(8.7)	14(6.8)	24(11.7)	124(60.2)	206(100)
KOHA	44(21.4)	46(22.3)	34(16.5)	6(2.9)	14(6.8)	62(30.09)	206(100)
NEWGENLIB	26(12.6)	38(18.4)	20(9.7)	14(6.8)	16(7.8)	92(44.7)	206(100)
SANJAY	4(1.9)	8(3.9)	16(7.8)	18(8.7)	32(15.5)	128(62.1)	206(100)
VTLS	2(1.0)	4(1.9)	14(6.8)	30(14.6)	32(15.5)	124(60.2)	206(100)
LIBSOFT	24(11.7)	12(5.8)	20(9.7)	14(6.8)	28(13.6)	108(52.4)	206(100)
LIMSOFT	4(1.9)	10(4.9)	18(8.7)	16(7.8)	30(14.6)	128(62.1)	206(100)
In House Developed	12(5.8)	6(2.9)	8(3.9)	14(6.8)	32(15.5)	134(65.0)	206(100)
Any Other							

Figures in the parentheses show the percentage

Proficiency rate on Network Connection and Access

It can be seen from the below table that a maximum of 63.10 percent(130) of the respondents are very good in accessing E-Mail in their work spot, followed by 55.33 percent(114) of the respondents are very good knowledge of accessing Internet and World Wide Web (www)

respectively in their workplace. Next to this, 32 percent (66) of the respondents are very good knowledge about to connection of Local Area Network (LAN) in their libraries. 29.1 percent (60) of the LIS Professionals are very good in Configuration of LAN within the Library and Intranet in their designated libraries. 23.3 percent (48) and 22.3 percent (46) of the respondents are very good in connection of Wide Area Network (WAN) and Configuration of Intranet in their respective designated libraries. 19.4 percent (40) and 13.6 percent (28) of the LIS Professionals are also have very good in connection of Virtual Private Network (VPN), VSAT and Extranet in their work spot.

Network Connection	1	2	3	4	5	Not Aware	Total
Configuration of Intranet	46(22.3)	54(26.2)	14(6.8)	10(4.9)	6(2.9)	76(36.9)	206(100)
Configuration of LAN within the Library	60(29.1)	46(22.3)	24(11.7)	6(2.9)	6(2.9)	64(31.06)	206(100)
Local Area Network (LAN)	66(32.0)	46(22.3)	22(10.7)	6(2.9)	8(3.9)	58(28.15)	206(100)
Wide Area Network (WAN)	48(23.3)	42(20.4)	26(12.6)	6(2.9)	8(3.9)	76(36.9)	206(100)
Virtual Private Network (VPN)	40(19.4)	30(14.6)	30(14.6)	10(4.9)	16(7.8)	80(38.8)	206(100)
VSAT	28(13.6)	18(8.73)	20(9.7)	30(14.6)	16(7.8)	94(45.7)	206(100)
Extranet	28(13.6)	12(5.82)	28(13.6)	26(12.62)	14(6.79)	98(47.6)	206(100)
Intranet	60(29.12)	56(27.18)	8(3.88)	8(3.88)	10(4.85)	64(31.06)	206(100)
Internet and World Wide Web	114(55.33)	58(28.15)	6(2.91)	2(0.97)	10(4.85)	16(7.76)	206(100)
E-Mail	130(63.1)	50(24.27)	2(0.97)	4(1.94)	8(3.88)	12(5.82)	206(100)

Figures in the parentheses show the percentage

Proficiency rate on Use of Website

Website usage and management of the LIS Professionals are verified in the table. 69.05 percent (144) of the LIS Professionals are very good in use of websites in their designated libraries, followed by 59.02 percent (122) of the respondents are very good in accessing and

searching of online databases in their workplace. Next to this, 53.04 percent (110) of the respondents are very good in searching and accessing bibliographical databases respectively in their work spot. 35.9 percent (74) of the LIS Professionals are very good in Use of Web Camera in their respective designated libraries. 17.5 percent (36) and 16.5 percent (34) of the respondents are very good in Design of Website and Mobile Casting in their workspot. 12.6 percent (26) and 11.7 percent (24) of the LIS Professionals are very good knowledge about Podcasting and Webcasting in their workplace.

Description	1	2	3	4	5	Not Aware	Total
Use of Website	144(69.9)	50(24.3)	2(1.0)	6(2.9)	4(1.9)	0.0	206(100)
Design of Website	36(17.5)	44(21.4)	42(20.4)	10(4.9)	28(13.6)	46(22.3)	206(100)
Searching and Accessing Online Databases	122(59.2)	48(23.3)	18(8.7)	4(1.9)	6(2.9)	8(3.9)	206(100)
Searching and Accessing Bibliographic Databases	110(53.4)	48(23.3)	22(10.7)	8(3.9)	4(1.9)	14(6.8)	206(100)
Use of Web Camera	74(35.9)	24(11.7)	44(21.4)	14(6.8)	14(6.8)	36(17.5)	206(100)
Webcasting	24(11.7)	40(19.4)	26(12.6)	30(14.6)	20(9.7)	66(32.0)	206(100)
Mobile Casting	34(16.5)	32(15.5)	32(15.5)	18(8.7)	14(6.8)	76(36.9)	206(100)
Podcasting	26(12.6)	32(15.5)	34(16.5)	20(9.7)	14(6.8)	80(38.8)	206(100)

Figures in the parentheses show the percentage

Proficiency rate on Use of Web Tools

It is found from the below table that, 66.00 percent (136) of the respondents are very good in use of WhatsApp, followed by 64.01 percent (132) of the respondents are also very good in use of Facebook respectively. Next to this, 62.01 percent (128) and 60.02 percent (124) of the respondents are very good in the use of YouTube and Wikipedia respectively. 55.3 percent (114) of the LIS Professionals are very good in use of web opac in their designated libraries. 47.6 percent (98) and 44.7 percent (92) of the respondents are very good in use of LIS –Forum and Skype respectively in their workplace. 43.7 percent (90) and 42.7 percent (88) of the LIS Professionals are very good in use of Orkut and Education Tubes at their work spot. 40.8 percent (84) and 39.8 percent (82) of the LIS Professionals are very good in use of Twitter and Blogs at their workplace.

Proficiency rate on Use of Web Tools

Web Tools	1	2	3	4	5	Not Aware	Total
Blogs	82(39.8)	80(38.8)	10(4.9)	8(3.9)	8(3.9)	18(8.7)	206(100)
Wikipedia	124(60.2)	50(24.3)	6(2.9)	2(1.0)	8(3.9)	16(7.8)	206(100)
YouTube	128(62.1)	48(23.3)	8(3.9)	4(1.9)	8(3.9)	10(4.9)	206(100)
Education Tubes	88(42.7)	56(27.2)	10(4.9)	6(2.9)	16(7.8)	30(14.6)	206(100)
Facebook	132(64.1)	40(19.4)	4(1.9)	2(1.0)	16(7.8)	12(5.8)	206(100)
Orkut	90(43.7)	26(12.6)	16(7.8)	12(5.8)	18(8.7)	44(21.4)	206(100)
Skype	92(44.7)	28(13.6)	26(12.6)	14(6.8)	22(10.7)	24(11.7)	206(100)
Twitter	84(40.8)	40(19.4)	24(11.7)	6(2.9)	22(10.7)	30(14.6)	206(100)
LIS-Forum	98(47.6)	68(33)	12(5.8)	6(2.9)	14(6.8)	8(3.9)	206(100)
Web OPAC	114(55.3)	58(28.2)	12(5.8)	4(1.9)	14(6.8)	4(1.9)	206(100)
WhatsApp	136(66)	40(19.4)		4(1.9)	16(7.8)	10(4.9)	206(100)
Any Other					2(1.0)	204(99)	206(100)

Figures in the parentheses show the percentage

Conclusion

The present age is considered as information age. The knowledge and information needs of the present clientele cannot be satisfactorily and effectively meet through books and periodicals alone. A lot of information in this computer age is produced and presented in other than the conventional forms. Thus, the non-conventional rather non-book materials do contain a considerable quantity of knowledge and information. To do so, the well-equipped library must have access to the mediated information contained in non-book materials, retrospective and latest literature on technical, other related sciences, advanced ICT infrastructure and well trained, skilled, qualified, and competitive LIS Professionals. Role of LIS Professionals working in the special libraries in Karnataka state is very important in managing and developing the library.

As an observation made, special libraries have less number of LIS Professionals at higher level. Thus it is suggested to recruit professionally qualified LIS Professionals to improve the quality of service effectively and efficiently. Majority of the higher level LIS Professionals must be given a specialized training at least once in two years.

In Karnataka state, there are many Universities, Colleges, Medical, Engineering, Research and Development Centres which are conducting training programmes, refresher courses, Faculty Development Programmes (FDP) for their staff. But most of these are general in nature. So it is suggested to come forward for special libraries to take initiation to organize advanced training programmes, refresher courses, managerial competencies, especially for LIS Professionals working in the special libraries.

Hence, it is a prerequisite condition that, LIS professionals to be aware of the recent trends in information services. Further, the LIS Professionals need to be trained on modern lines so as to enable them to install and extend ICT based information services. On account of this trend, it is found essential that, special libraries have the library advisory committee to oversee the functioning of library and to improve upon the services on continual basis to meet the needs of the students, faculty and other users. The library committee helps in judicious allocation of budgets, acquisition of need based information sources, development of infrastructure facility and deputation of staff for acquiring knowledge and skills. The committee will also recommend for improvements from time to time based on the feedback analysis report. On the other hand they have to impart knowledge and train their users in using ICT facilities and accessing various online information services. In this direction, the librarians of special libraries have to play two major roles. One in knowing the information sources and the other in establishing rapport with user community of their libraries. Here librarian is expected to bridge the gap with the thorough knowledge of ICT.

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