# A Study on Information Communication Technology (ICT) Literacy Skills among the LIS Professionals of Some Selected Special Libraries of Jorhat, Assam: A Study

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**Abstract:**Despite coming of age with the Internet and other technology,many LIS professionals lack the information and communication technology (ICT) literacy skills which include locating, evaluating, and communicating information with the necessary to navigate and use the overabundance of Information available today. This paper presents a study of the validity of a simulations-basedassessment of ICT literacy skills among the LIS professionals in some Special libraries of Jorhat, Assam. An overall goal for the assessment is to support ICT literacy skills instructional initiatives among LIS professionals of Special Libraries of Jorhat, Assam.The presence of library professionals provides quality information services to different types of information seekers having different kinds of composite information needs. Hence, the library and information science professionals must possess adequate ICT skills to manage their libraries. The quality of library services have been depends on the ability of the LIS professionals. The study ICT skills among LIS professionals in Special Libraries has determine the proficiency of ICT skills including the awareness of ICT based application, awareness of library automation software, awareness of digital library software, skills for managing electronics resources, skills for managing ICT based library services and the compulsion in acquiring ICT skills.

## I.    INTRODUCTION

"**ICT** proficiency is the ability to use digital technology, communication tools, and or networks appropriately to solve information problems in order to function in an information society. This includes the ability to use technology as a tool to research, organize, evaluate and communicate information and the possession of a fundamental understanding of the ethical/legal issues surrounding the access and use of information".

The current age is information age where information society creates and makes use of information the development, which it essentially requires "information literacy". Information and Communication Technology (ICT) is undergoing revolutionary changes in the dynamic environment. Libraries are playing a crucial role in promoting ICT activities for their day to day transactions since many years. The value of ICT-based resources and services are that it can be easily shared, distributed, updated, manipulated, and rapidly searched (Haneefa, M. 2009).

ICT defined as a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. The use of information and communication technology (ICT) has enabled the libraries not only to offer their clientele the appropriate information available within their libraries but also provide access to information of other libraries, both local and outstations. It can be used in libraries for the development of new information services and computerization of library services. It is useful for improving productivity and efficiency of library services effectively, provision of quality information, saving the space using the electronic storage, improving of cooperation in sharing of resources.

In the present scenario of library services, the library and information professionals must possess adequate ICT skills to manage their libraries. The main ICT skills required to manage libraries include handing of operating systems, use of application software packages, knowledge of databases and programming, acquaintance in webpage design, library automation software, technical skills and managerial skills. Among different types of libraries, special libraries are generally seen to be in advantageous position from point of view of fund and other resources to implement latest developments available in the globe to satisfy their special class of clientele. With this view in mind, it is an attempt to identify the present scenario of the ICT skills among the LIS professionals of Special Libraries attached to scientific organization of Assam with special reference to Jorhat district.

***ICTL for library professionals:***
Science and technology have impacted on skills that every field need it to be successful in the society. Today library professionals have library science degree but that degree is not too much sufficient for providing library services. Library Professional's soft skills are a very important element which helps to grow and success of an organization.

The advancement in communication & information technologies has resulted in the emergence of global village and accordingly the libraries are now also changing to what may be called virtual or digital libraries. It has affected significantly the nature of delivery of library resources and services. The traditional concepts of library, bibliographic description and dissemination of information are to be fine-tuned to the new digital environment by the library and information professionals. So the LIS professionals working in the digital environment have to face many challenges. LIS professionals are deluged with advice as how to use this media to acquire and organize various learning resources and satisfy the complex and ever increasing information needs to their users. The digital media is helping libraries to increase their efficiency and effectiveness by dissemination of information to all dimensions. The computer and related digital resources have to play a central role for research, education, technology transfers and new research applied in the fields. The digital media is wide spread every corners of the world. The basic component used in digital media revolution is internet, web page and email. These digital services tools are equally important for any modern library. In view of this emerging scenario of modern and digital library, library professionals have to keep their skills up-to-date. Every person of the society has a fundamental right of information awareness and information access (Kandpal K N et al 2018).

ICT applications are very important in library and information centers in the context of changing user needs. Knowledge of ICTapplications is necessary for library professionals to meet the ever changing and complex requirements of users. Literacy on ICT makes both the user and the library professional better to use the information. It is crucial part that the libraries must give priority to ICT adoption if they are to continue in the dealing purpose of providing information to the users and to continue to be main point of access for researchers/students (Ani, O.E, et al).

This is a challenging time for librarians. There are many changes taking place in the field. These changes include accelerated growth of new knowledge, new technology, and shifts in the provision of library and information services. All of these changes happening at the same time make continuous education one of this field's top priorities (Bender D 1998)

There is a need for additional training to increase the traditionalskills and knowledge base with competencies in ICTuse. LIS professionals must be flexible and adapt traditional skills to incorporate the requirements of technological advances (Mahmood, Khalid. 2007).

Libraries with the help of new inventions in ICT have touched all heights of information world and aim to provide high-quality service in less span of time. ICTL has been the main ingredient of digital librarianship. ICT applications are indispensable to library professionals in several ways:

➢ Help the library professionals to identify and acquire current andrelevant materials for their users.
➢ Help to identify and acquire sources of information that are mostrelevant, and organize and manage them for the easy access andretrieval.
➢ Enable to staff training to access and exploit relevant information resources in the most effective and efficient way.
➢ Enhances the professional image of library staff as they take the readin raising ICTL level within the organization and thus- contribute toorganizational development.
➢ Allow library and information professionals to create, develop andmanage a library or information unit which meets the specificinformation needs of their parent organization.

Library Professionals should quickly learn and implement ICT tools and techniques to provide faster access to and retrieval of information. Due to the lack of ICTL, most of the library professionals are not confident enough to handle many of the ICT tasks in libraries. Library professionals must acquire knowledge about the basics of computer and communication technology. Updating themselves with contemporary knowledge at regular intervals is equally important for delivering quality services. This, in turn, aids to improve the bond with the user, reliability and regularity of library services. Library professionals should have the necessary skills to handle information, communication and computer technologies to provide ICT services to the user community quickly and effectively. Many doors have been opened for library professional to learn ICT technologies. These are:

➢ Relevant and contextual use of ICT based materials, tools and technology.
➢ Use of ICT-based materials, tools and techniques.
➢ Individual instruction, orientations, tours, and workshops.
➢ Membership to online professional groups, discussion for, etc., by for sharing experience and avail the expertise from the professionals
➢ Web-based instruction /tutorials/self-help guide.

### *Services provided through ICT in libraries:*
**Document delivery services:** Through this service, library delivers copies of journal articles and book chapters from participating libraries.

**Inter library loan:** It is a comparative arrangement among libraries by which one library may borrow materials from another library.

**Indexing and abstracting services:** It is a method which is used to retrieve information from a table in memory or a file on a direct access store or the art of compiling an index. The preparation of abstracts, usually in a limited field, by an individual, an industrial organization, and these are being published and supplied regularly to subscribe.

**Chat services:** Online chat may refer any kind of communication over the internet. Online chat may address as well point to point communication as well as multicast communications from one sender to many receivers.

**CAS:** The purpose of the current awareness services to inform the users about new acquisition in their libraries. For this display boards and shelves are used. Some libraries produce complete or selective lists for circulation to patrons.

**SDI:** SDI refers to tools and resources used to keep a user informed of new resources on specified topics.

**Scanned Copies:** A scanning service for material not available electronically, which is held by the library. This includes articles from journals and chapters from books.

**Bulletin board services:** It is a computer system running software that allows users to connect and login to the system using a terminal. Once logged in, a user can perform functions such as uploading and downloading software and data, reading news and bulletins and exchanging massages with other users.

**Electronic services and E-resources:** these are mainly CD_ROM, OPACs, E-journals, E-books, ETD and internet which are replacing the print media. These are found to be less expensive and more useful for easy access.

**Digital Library:** A digital library in which collections are stored in digital formats and accessible by computers. Digital contents may be stored locally, or accessed remotely via computer networks.

**Audiovisual materials:** The audiovisual collection contains a wide range of audiovisual materials to support the research and study needs of staff and students.

**Internet:** Though internet communication has become easier and faster and decision are made instantaneously. Internet made it easier to have access to information to all people at all places and at all the times.

**Library website:** It helps to recognize the facilities and information sources available in the library.

**Database:** Database is an organized collection of data for one or more purposes, usually in digital form. The data are typically organized to model relevant aspects of reality, in a way that supports process requiring the information.

## II. SCOPE OF THE STUDY
The scope of the study is limited to the 3 surveyed special libraries of Jorhat, Assam. The study covers Information Communication Technology Literacy skills among the LIS professionals of some selected Special libraries of Jorhat, Assam.

## III. OBJECTIVES OF THE STUDY
The main aim of the research problem is to ascertain the ICT Literary skills among LIS professionals in Assam. Following are the objectives of the present study. :

- To identify LIS professionals' awareness towards ICT services in the selected special libraries of Jorhat Assam.
- To know the awareness of LIS professionals' towards ICT based application, library automation software, digital library software.
- To identify the skills for managing the library resources and the application of ICT based library services upon it; and
- To find out the barriers in acquiring ICTL Skills among the LIS professionals in the selected libraries.
- To identify authority's concerned towards LIS professional to grow their knowledge on ICTL skill.

## IV. METHODOLOGY

The present study was based on the survey using schedule, questionnaire, observation and conducting interview as well as collection of data from the secondary sources of information, i.e. Institution's Websites/Home page, Annual reports, etc. The study covers limited areas of library's collection and services, development of ICT infrastructure, status of library automation etc.

## V. DATA ANALYSIS

The study has been conducted among 12 LIS professionals in Special Libraries of Jorhat.

For the present study, three special libraries of Jorhat, Assam are selected and collected different information and data related to the effectiveness of ICT literacy skills among the LIS professionals of special libraries of Jorhat. Data are organized in a tabular form and analyzed below. In the tabular forms I have used short forms of the institutes name for the convenience.

***Institutes covered in the study with the name of libraries:***

There are approx. 70 (seventy) number of special libraries are there all over the state of Assam which can be categorized according to their broad subject area of work like humanities, social sciences, science & technology. The study is confined to some selected special libraries of Jorhat, Assam which are attached to different organization of science & technology to see theICT literacy skills among LIS professionals, Assam. Table-1 shows the selected institutions for this present study.

**Table no 1:** Selected institutions of Jorhat with their date of establishment

| Sl. no. | Name of The Institute | Year of Establishment | Name of the Library | Place |
|---|---|---|---|---|
| 1. | North East Institute of Science & Technology (NEIST) | 1961 | Knowledge Resource Centre | Jorhat |
| 2. | Toklai Tea research Centre | 1911 | Toklai Tea Research Centre Library | Jorhat |
| 3 | Indian Council of Forestry Research and Education (ICFRE) | 1988 | RFRI Library | Jorhat |

***Library personnel:***

Table: 2 shows about the library personnel. From the table it is observed that in all the libraries selected for study trained staffs are less. Most of the libraries are operated by one professional with one or two non-professionals. This hampers the working and the services to be impacted by the libraries. In a library personnel should be professional. Because to run a library properly its staff should aware about library science and well trained about library operations.

**Table no 2:** Library Personnel

| Sl. No. | Name of the Library | Total staff | Designation of staff |
|---|---|---|---|
| 1. | RFRI Library | 4 | Library Information Asst.(3) & Bearer(1) |
| 2. | Knowledge Resource Centre(NEIST) | 5 | Technical Asst., Senior Technician & unskilled staff (3). |
| 3. | Toklai Tea Research Institute Library | 3 | Library Cum Information Officer., Senior Asst. & Attendant |

The present scenario of poor staff strength in the above libraries is due to least importance given to libraries by respective managements of the organizations. For example, during 1980s and 1990s KRC NEIST had six professionals, four semi-professionals and five non-professionals. But as the management did not made any attempt to recruit new trained staff in a period of thirty years to replace the vacant positions created by superannuation of staff. Same is the situation in Toklai Tea Research Institute library. This library is responsible for bringing out the institutional publications and their sales. For all these activity it had four professionals, two semi-professionals and four supporting staff earlier which have come down to three only.

### *Library organization:*

Table no. 3 shows about the number of working days of the libraries in the whole year. Among the libraries except RFRI library both KRC (NEIST) and Toklai Tea Research Institute Library maintain 5 days as normal working day. Till few years back KRC (NEIST) use to keep the facility open for scientific community up to 9.00pm on working days and during 8.30am to 5.00pm on Saturday. But due to diminishing staff strength it has curtailed to working hours only.

**Table no 3:** Library Organization

| SL NO | Name of the Library | Timing | Normal Working Days | Sunday/Holiday |
|---|---|---|---|---|
| 1 | RFRI Library | 9:00 am-5:30 pm | Yes | No |
| 2 | Knowledge Resource Centre(NEIST) | 8:30 am-5:00 pm | Yes(5 Days) | No |
| 3 | Toklai Tea Research Institute Library | 8:30 am-5:00 pm | Yes(5 Days) | No |

### *Status of Technical Operations in the selected Libraries:*

Special library should be specialized in its own right but some of the special libraries of the study specialized only its collection and services to some extent. Manual system cannot meet that much information needs of the readers so computerized system of information storage and retrieval is must.

It has been shown from the surveyed data that 100% libraries have computer facility for both the library personnel and users. The libraries are using different software and operating system for their regular housekeeping operations.

From the Table: 4 it is found that 90% of the libraries are using different classification scheme and cataloguing code. From the survey it is found that the entire three libraries follow different access system. It is found from the study that except KRC NEIST both Toklai Tea Research Institute library and RFRI library done the Classification process through DDC and as regard to cataloguing it's seen that except Toklai Tea Research Institute library both RFRI Library KRC NEIST maintain the process of cataloguing. Where the processing of cataloguing of RFRI Library is MARC and KRC NEIST is using the AACR I, AACR II cataloguing code. Both RFRI Library and KRC NEIST use KOHA as library software. Toklai Tea Research Institute library does not have any library software. The KRC, NEIST provides free internet services to its users. Average 15-20 users can access Internet, e-resources per day. Moreover, there are about 400 computer terminal at NEIST LAN through which the readers can access information from their desk-top without visiting to KRC.

From the Table: 5 it is found that among the selected number of personnel 58.33% are aware about library Operating system, Classification scheme and Access system and 41.66% personnel are aware about Library software and Cataloguing Code process.

**Table no 4:** Technical Operations carried out by special libraries under study

| SL NO. | Name of The Libraries | No. of Computers | Operating System | Software | Classification Scheme | Cataloguing Code | Access System |
|---|---|---|---|---|---|---|---|
| 1. | RFRI Library | 3 | LINUX | Koha | DDC 23rd | MARC | Open access |
| 2. | Knowledge Resource Centre(NEIST) | 5 | LINUX &Windows | Koha | UDC 2015 | AACR I, AACR II | Open access |
| 3. | Toklai Tea Research Institute Library | 3 | LINUX & Windows | NA | DDC | NA | Closed access |

**Table no 5**: Awareness towards the technical operations

| Sl no. | Technical operations | Response Number | % of response (N=12) |
|---|---|---|---|
| 1. | Operating System | 7 | 58.33 |
| 2. | Software | 5 | 41.66 |
| 3. | Classification Scheme | 7 | 58.33 |
| 4. | Cataloguing Code | 7 | 41.66 |
| 5. | Access System | 7 | 58.33 |

*Modules of software in operation for automation:*
Table: 6 shows the different areas of automation done by the surveyed libraries. It is found from the study that out of the 3 libraries surveyed 1 library is automated fully. Rests are partially automated followed by RFRI library and Toklai Experimental station libraries have done all acquisition, cataloguing, circulation, OPAC, Serial Control modules except article indexing module.

**Tableno 6:** Modules of Software for automation.

| Sl. No. | Name of Libraries | Acquisition | Cataloguing | Circulation | OPAC | Serial Control | Article Indexing |
|---|---|---|---|---|---|---|---|
| 1. | RFRI Library | Yes | Yes | Yes | Yes | Yes | No |
| 2. | Knowledge Resource Centre(NEIST) | Yes | Yes | Yes | Yes | Yes | Yes |
| 3. | TTRI Library | Yes | Yes | Yes | Yes | Yes | No |

*ICT Infrastructures Availability:*
Information and Communication Technology (ICT) has radically transformed most of the services provided by a library. The application of ICT in libraries has made remarkable changes in their daily operations and services. Information processing, storage, communication, dissemination of information, automation, etc. revolutionized the information communication technology. One of the most relevant outcomes of ICT is the introduction of the internet and development of World Wide Web, which has necessitated a major shift in the role of libraries. The application of ICT in the libraries becomes essential to provide the facilities to the user community.

ICT includes desktop, laptop, CD drivers, OPAC terminals, networking, CD network, computer server, etc. as well as the various services and applications associated with them. When such technologies are used for educational purpose, ICT becomes a subfield of educational technology. Table: 7 shows the current status and different ICT based facilities in the libraries selected. It is found from the study that most of the libraries are using the basic things only related to ICT like, Computer, laptop, server, CD drivers, scanner, printer, photocopy machine, telephone, generator, networking and special to library OPAC terminals. From the study it is found that all the three libraries have Desktop facility, Computer server, Scanner and Printer. From the study it is found that 66.66% libraries have Laptop, Networking, Telephone services and 33.33% libraries have CD Driver, Photocopy machine, web camera facility.

**Table no: 7** ICT Infrastructures

| ICT Infrastructures | No. of Libraries | Percentage (%) (n=3) |
|---|---|---|
| 1. Desktop | 3 | 100 |
| 2. Laptop | 2 | 66.66 |
| 3. CD Driver | 1 | 33.33 |
| 4. OPAC Terminals | 0 | 00 |
| 5. Networking | 2 | 66.66 |
| 6. CD Network | 0 | 00 |
| 7. Computer server | 3 | 100 |
| 8. Photocopy Machine | 1 | 33.33 |
| 9. Scanner | 3 | 100 |
| 10. Printer | 3 | 100 |
| 11. Telephone | 2 | 66.66 |
| 12. Generator | 0 | 00 |
| 13. Web camera | 1 | 33.33 |

| 14. | Microfilming | 0 | 00 |
|-----|--------------|---|----|
| 15. | Wireless device | 0 | 00 |

*Purpose of using ICT:*

The functions of the software are to automatic the library systems which cover acquisition, cataloguing, circulation, serial management, stock, verification, etc. ICT is used in various library housekeeping operations as well as for different library activity and service Table: 8 and shows about purposes of libraries of acquiring or using ICT application. It is found from the studies that among libraries 66.66% libraries are using ICT mailing and document sharing purpose, for subscription of electronic journals, ICT for manuscript and for updating knowledge of both users and staffs.  Then 33.33% libraries are using ICT for availability of electronic books, for online databases, for searching Webopacs/ OPACs.

**Table no 8**: Purposes

| Purposes | No. of the Libraries | Percentage (%) |
|----------|---------------------|----------------|
| 1.E-mail & Document sharing | 2 | 66.66 |
| 2. Electronic Journals | 2 | 66.66 |
| 3. Electronic Books | 1 | 33.33 |
| 4. Collect data through Internet | 0 | 00 |
| 5. Online databases | 1 | 33.33 |
| 6. For Career Development | 0 | 00 |
| 7.Presentation | 0 | 00 |
| 8.Manuscript Proposal & papers | 2 | 66.66 |
| 9.Update Knowledge | 2 | 66.66 |
| 10. Search Webopacs/OPACS | 1 | 33.33 |

*Awareness of ICT based Library services:*

Table: 9 below shows awareness rate of library personnel towards the services provided in the respected libraries. From the study it is found that accordingly 58.33% personnel are aware about OPAC and Internet services, 41.66% personnel aware about CAS, SDI, Online Bibliographic service and online Indexing and Abstracting service.

**Table no 9:** Services

| Sl. No. | ICT  based services | Response number | % of Response (N=12) |
|---------|---------------------|-----------------|----------------------|
| 1. | CAS | 5 | 41.66 |
| 2. | SDI | 5 | 41.66 |
| 3. | OPAC | 7 | 58.33 |
| 4. | Internet | 7 | 58.33 |
| 5. | Online bibliographic service | 5 | 41.66 |
| 6. | ILL through networking | 0 | 0 |
| 7. | Online Indexing & Abstracting service | 5 | 41.66 |

*Primary ways to learn about ICT:*

Table- 10 shows about the ways to learn about ICT. It is seen that 25% library professional talks about teaching/supervising skill and Library training program to learn about ICT. 16.66% library professional acquired Subject librarian skill to learn about ICT and 41.66% library professional acquired various ways to learn about ICT.

**Table no 10:** Primary Ways to Learn about ICT

| Aspects | Response number | % of Response (N=12) |
|---------|-----------------|----------------------|
| 1. Teacher/ Supervisor | 3 | 25 |
| 2. Library Homepage | 0 | 00 |
| 3. Library training | 3 | 25 |
| 4. Subject Librarian | 2 | 16.66 |
| 5. Orientation | 0 | 00 |
| 6. Others | 5 | 41.66 |

***Barriers in using ICT Skills:***
Sometime ICT cannot run properly in the libraries due to lack of several aspects which are essential to operate the ICT tools. Table No. 11 shows how all the library professionals are facing several barriers in acquiring ICT skills, like 58.33% are facing barrier in acquiring ICT skills from insufficient fund for ICT infrastructures followed by inadequacy of staff training, long gap orientation from time to time and somewhere absence mind-set of the professionals. 33.33% professionals are facing barriers for lack of proper ICT infrastructures and sufficient ICT knowledge. 66.66% professionals are facing barrier for lack of skilled manpower to train. And lastly, 100% professionals talks that they are not getting support from the concern authority to acquire proper knowledge on ICT skills.

**Table no:** 11 Barriers

| Barriers | No. of Response | Percentage (%) (N=12) |
|---|---|---|
| 1. Insufficient of Funds | 7 | 58.33 |
| 2. Lack of infrastructure | 4 | 33.33 |
| 3. Lack of support from the concern authority | 12 | 100 |
| 4. Lack of skilled manpower | 8 | 66.66 |
| 5. Inadequate staff training | 7 | 58.33 |
| 6. Long gap oriented from time to time | 7 | 58.33 |
| 7.Absence of mind-set of the professional | 7 | 58.33 |
| 8.Lack of ICT Knowledge | 4 | 33.33 |

## VI. FINDINGS
- It is found from the study that the LIS professionals of the selected libraries are not full-fledged aware about ICT services.
- Inadequate training in ICT applications is the main barrier in the LIS professionals of the selected libraries.
- Lack of support from authorities has also created problem to achieve good ICT infrastructure with network facilities.
- Lack of knowledge about library software and library automation modules.
- Insufficient of funds is also creating a major problem for the library in solving the barriers facing by the professionals in acquiring knowledge of ICTL skills.

## VII.SUGGESTIONS
- The professionals should be trained on ICT and its applications by conducting some training, seminar and conferences.
- In this age of ICT, Librarians/Assistant Librarians should try to convince their parent authority to take initiatives to develop their libraries and to provide different web based services to its professionals.
- Up to date technologies must be applied to the libraries.
- Special fund provision should be implemented in the libraries for ICT applications.
- Number of skilled and trained manpower should be increased in the libraries.
- Every LIS professional should be given the chance to work with ICT in library.
- Library should install much faster machines for faster access.
- As the survey has shown, in addition to access infrastructure and content having requisite skills, staffs' motivation is a critical factor in ICT adoption.
- The last but not least there should be a promotion policy for LIS professional in the libraries selected. It will boost up the moral of all the professionals and they can use and utilize their knowledge and potential towards strengthening the library system well.

## VIII. CONCLUSION
It is found from the study that the status of ICTL skills among LIS professionals in the selected libraries not that much satisfactory. The essentiality of ICT application for library is unquestionable. There is a great need for ICT skills among library and information professionals to hold their relevance to the society and network age. The fastest growth of Information Communication Technology demands the changing role of LIS professionals from gatekeepers to guides. It is necessary to keep up with the tools and resources of ICT. And the responsibility of transforming information seekers into ICT literates lies on the shoulders of the library professional. So in this age of technology the ICTL skills among the LIS professionals much more needed.

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