



# INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

## “A Study of Information Communication Technology (ICT) Skills among Library and Information Science (LIS) Professionals”

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**Abstract:** Library has always played a crucial role in the development of civilization from the time immemorial and regarded as a service-oriented organization wherein the information needs of the users are satisfied. With the introduction and implementation of Information & Communication Technology (ICT) in various library activities, the majority of the transactional and other important services are done digitally or electronically by the Library & Information Science (LIS) professionals. The main aim of this paper to explore knowledge of ICT skills among library professionals including importance of ICT literacy for them. It also covers the types of ICT literacy's among library professionals and explains how it is important for library development as well as self-assessment. In general, ICT literacy models are helpful for library professionals to generate awareness about ICT tools and techniques, selection of library automation software. It also focuses on the types of literacy's like hardware skills, software skills and resource literacy and skills.

**Keywords:** library automation software, ICT and library professionals

### Introduction:

. An academic library is regarded as the heart of a university that plays the important role of providing parallel support to its various academic needs such as teaching, learning, and research. With the advent and implementation of different ICT techniques in various walks of life, library of different types also found it useful as driving force to serves users' need, bringing efficiency in transactions (acquiring, organization, storing, retrieving, and dissemination of information), and security of its environment. The ICT has changed our philosophy of serving the user by LIS professionals, due to the advancement of ICT application libraries are providing both prints as well as electronic and ICT based information services.

Nowadays, the users can access the information without wasting any time with the change in trends of delivery or access of information from traditional methods to digital methods. Due to digital transformation, LIS professionals must acquire the right skills to discharge their duties efficiently and must be trained in the application of various ICT tools like automation, Bibliographic standards, ICT based library services, web 2.0 skills, mobile information services, ILMS, Citation, IR, etc. The LIS professionals must learn and adjust themselves to a rapidly changing the environment by acquiring various ICT skills so that they can become valuable assets for the organization. Additionally, LIS professionals need to update their ICT skill on a regular basis to work effectively in the digital environment. Hence, LIS professionals have a role to play by acquiring ICT skills to discharge their duties.

## Review of literature

*Dhanavandan & Mani (2008)*<sup>3</sup> found that all the library professionals use some kind of ICT tools, particularly the Internet and mobile phones. The use of ICT by the female library professionals is higher than the male library professionals. All the library professionals strongly believe that IT tools play a significant role in supporting and enhancing their professional and research activities.

*Singh, Sharma, & Negi (2009)*<sup>4</sup> conducted a case study and found that the majority of Library and Information Centres of Noida have basic hardware facilities such as servers, computers, printers, photocopiers, internet connectivity, etc. At the same time it was observed that majority of LIS professionals were not properly aware of the use and operation of the ICT hardware.

*Singh et.al. (2009)*<sup>5</sup> a case study based on ICT literacy among the staff of Banaras Hindu University library system ranging from professionals, semi-professionals and non-professionals conducted and reveals that an average number of library professionals are ICT literate. At the same time it was found that the semiprofessional and non-professional staff is poor and has a low level of ICT knowledge and skills.

*Olatunji and Oluwadare (2011)*<sup>6</sup> a comparative study was conducted at South-West, Nigeria found that the level of ICT awareness among the staff members is very high, but again unaware of technicalities and related applications.

*Ansari, (2013)*<sup>7</sup> pointed that “ICT skills have become increasingly important in the pursuance of degree-level education will affect both how students manipulate these e-learning resources and the way they are used for learning. ICT skills deal with the application of ICT to a specific purpose. It is not just about using a software package or using operating systems, neither is it concerned with keyboarding skills and students’ ability to copy type or follow instructions. Instead, ICT skills are about the ability to use their knowledge about ICT to find, develop and present information; whether it is text, image or number, or this entire integrated task”

Vijaykumar and Antony (2015)<sup>8</sup> an analytical study conducted on women library professionals from major two universities in Kerala viz. Sree Shankaracharya University of Sanskrit (SSUS) and Cochin University of Science and Technology (CUSAT). The study found that the majority of women library professionals have an average level of skills on managing ICT based library services. The study also suggested that university library professionals need in-house training programmes to update their ICT skills.

## Statement of problem

The present study discovers at the identification of essential ICT skills in LIS professionals. The study has provided an insight to meet the changing needs of users by learning ICT skills/competencies in the digital era. In totality, the results provide emphasis on the necessity of ICT skill for efficient delivery of library services for the betterment of the library as a whole. This present study will help the authorities of the academic libraries to include courses in ICT skills in the academic/professional curriculum which would help the working LIS professionals to become competent in various skills. The present study also provided a platform to LIS professionals to find the area of focus to learn and update their ICT skills in digital environment by LIS professionals for efficient delivery of library services for the betterment of the library as a whole

## Objectives of the Study

1. To know the different methods of computer skills acquired by the LIS Professionals.
2. To find out the ICT skills required to perform the Library and Information Services in ICT environment by the LIS Professionals.
3. To find out problems while handling library software

## Research Methodology

The present study is based on secondary sources of data and a descriptive nature which describes the ICT skills required performing the Library and Information Services in ICT environment by the LIS Professionals. It provide different methods of computer skills acquired by the LIS Professionals

## ICT Skills for LIS Professionals

For many libraries, organizing their books and other media can be daunting task, especially as the library grows with more material. Years ago we had crude card catalogue systems (remember the Dewey Decimal System) that kept things organized, but were difficult to maintain. With today's computing technology, organizing our libraries has never been easier or more efficient. Gone is the card catalogue and in some libraries, it's much easier to locate a book through an internet connection and picking it up upon your arrival, rather than wasting the time scouring the aisles looking for your next read. Now the world has been blessed with wonderful software solutions that make everything easier to do, doesn't mean that every

library in the universe is using these solutions. Many Libraries do not have huge amounts of money to burn, and any that they do get usually goes to purchasing additional resources.

## Hardware Skills

A hardware skill includes the level of expertise and familiarity with computers and other ICT tools. Computer literacy generally refers to the ability to use applications rather than to program. Individuals who are familiar with computer and those who are also computer literate are sometimes called power users. The level of familiarity with the basic hardware and *software* (and now Internet) concepts that allows one to use personal computers for data entry, word processing, spreadsheets and electronic communications are prerequisites of hardware literacy. The ICT tools used in libraries for various resources and services are Computers, Printers, Image Scanners, Barcode Scanners and Printers, RFID Technology, Mobile, Web Camera, LCD Projector, LCD TV, photocopying and many more.

## Software Skills

The main purpose of software literacy is automation of library operations. Modern library management system depends on library software. The selection procedure of software is a difficult task, because of various types of library software available in the market. These include proprietary, open source and in-house developed software for library functioning. The application of Information and Communication Technology (ICT) in the library is to attain efficiency, accurate reporting, and improved services. Core services of the library like circulation, cataloguing, acquisition, serial management, reference services and special collection readily benefit from automation.

### 1. Proprietary Software

Proprietary software is owned by an individual or a company usually the one that develop it. There are major restrictions on its use as its source code is always kept secret. While, it is important that the software should have all the module e.g. acquisition, cataloguing, circulation, serial control, OPAC, and administration required to carry out all routine work of the library. It should also support Unicode for handling Indian and foreign languages. At last it must be user friendly application. Some prominent propsoftwares successfully installed in libraries are LIBSYS, SOUL, LIBMAN, SANJAY, TLMS, ALICE, etc.

### 2. Open Source Software

With many Open Source Software (OSS) applications available for library and information management, many organizations have novel options for acquiring and implementing systems. Open Source Software (OSS) are computer software that are made available to the general public with its source code and relaxed copyright restriction. It allows modification by users in line with their needs, requirements, and purpose of usage. OSS software are usually effective and often acquired free of charge. OSS implies to factors such as an exorbitant cost of proprietary software and library budgetary constraint.

## Resource Skills and literacy

Resource literacy is the ability to understand and use information in multiple formats from a wide range of sources when it is presented using computers. The users can access, locate, download, manage and use information in the appropriate formats as and when they need. Okiki (2012) has examined that the information explosion has greatly increased the number of electronic information resources. On the other hand, electronic resources have enhanced accessibility, increased usability / visibility, effectiveness and established new ways for users. Sundareswari (2013) has stated that the e-resources are emerging in the form of e-books, e- Journals, e-articles, e-paper, e-thesis, edissertation, e-databases, and CD-ROMs, which are likely to be the alternative to the print media. Emerald, EBSCO, N-List, Scopus are some of the examples of online databases. Mostly, updated information is published in these e-resources. The familiarity and use of electronic information resources in the libraries for rapid development are necessary and important in the present scenario.

According to Joshi, Singh, & Jagriti (2015), Eresources like e-directories, e-reports, e-databases, documentations, e-books, e-journals and e-audio books are extensively accessed by MPs and staff in the Parliament Library of India as a part of the daily work. Library resources are mainly of two types, print and electronic formats. The electronic formats are both offline and online resources. Off-line resources are Cassettes, CDs and DVDs whereas online resources are e-books, e-journals and magazines, e-thesis, e-dissertations, e-papers, ereports, e-databases etc. Online resources are can be of types like the subscribed ones and the other ones are free open access. Some of the e-resources are:

### 1. Subscribed E-Resources

There are plenty of subscribed E-Resources are available for the end users. Some of the most commonly used e-Resources subscribed in India are:

**N-list INFLIBNET:** Project entitled "National Library and Information Services Infrastructure for Scholarly Content (N-LIST), being jointly executed by the UGC-INFONET Digital Library Consortium, INFLIBNET Centre and the INDESTAICTE Consortium, IIT Delhi. It can be accessed by authorised users from registered colleges and universities under NLIST programme. N-LIST has access to 6,000+ e-journals and 31,35,000+ e-books.

**EBSCO:** It offers resources to customers in from academic, medical, K-12, public library, law, corporate, and government markets areas. Its products include EBSCONET, a complete e-resource management system, and EBSCO-host, which supplies a fee-based online research service with 375 full-text databases, a collection of over 600,000 plus ebooks, subject indexes, point-of-care medical references, and an array of historical digital archives.

**Emerald:** Emerald gives access to e-Journals, e-Books, Case Studies, etc. As on today, Emerald manages a portfolio of nearly 300 journals, more than 2,500 books and over 1,500 teaching cases. Over 270 Emerald journals are listed in Web of Science. Emerald adds over 150 new titles publishing each year. Now, Emerald also publishes more than 20 fully open access journals

**INDEST Consortium:** Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortium was set up in 2003 by the Ministry of Human Resource Development (MHRD) after the recommendation of an expert group appointed by the Ministry. The consortium subscribes to over 12,000 electronic journals from a number of publishers and aggregators.

**J-Gate :** J-Gate is an electronic gateway to global e-journal literature, launched in 2001 by Informatics India Limited. J-Gate provides a seamless access to millions of journal articles available online offered by 13,187 Publishers. It presently has a massive database of journal literature, indexed from 47,445 e-journals with links to full text at publisher.

**Web of Science:** It is a kind of access to multidisciplinary information from approximately 8,700 of the most prestigious, high impact research journals in the world.

**DELNET:** DELNET is established with the prime objective to promote resource sharing among the libraries through the development of a network of libraries. One of the objectives is to coordinate suitable collection development and also to reduce unnecessary duplication wherever possible.

**IEEE:** It is full text access to more than 4 million articles in engineering and technology. It covers 170+ Journals.

**Manupatra:** It is India's premier legal information resource which is designed to be used by a wide variety of users across Legal, Educational, Finance, Tax, Accounting, Corporate, Risk Management, Banks, Consulting, Government, Law Enforcement, Intellectual Property, Media markets and others.

## 2. Open Access E-Resources

Open access e-resources are freely available for access, can be used and download from everywhere, anytime. There are no terms and conditions to access and use of e-resources. Some of the websites of free e-resources are as follows.

**DOAJ (directory of open access journals):** It includes a free, full text, quality controlled scientific and scholarly journals, covering all subjects and many languages.

**NISCAIR:** NISCAIR is provides Science & Technology information and documentation services through myriad activities such as abstracting and indexing, design and development of databases, translation, library automation, providing access to international information sources, human resource development, consultancy services in setting up modern library-cum-information centres. Currently NISCAIR is having 20 e-journals which are available to users open accessible.

**NCERT:** The National Council of Educational Research and Training (NCERT) is an autonomous organisation set up in 1961 by the Government of India to assist and advise the Central and State Governments on policies and programmes for qualitative improvement in school education. Free e-books up to 12<sup>th</sup> standards are available for users to download.

**Shodhganga:** University Grants Commission (UGC) mandates submission of electronic version of theses and dissertations by the researchers in universities with an aim to facilitate open access to Indian theses and dissertations to the academic community world-wide. It ensures easy access and archiving of Indian doctoral

theses to help raise the standard and quality of research. There are over one lakh full text theses, synopsis from over 250+ universities.

**NPTEL:** It provides E-learning through online web and video courses in Engineering, Science and Humanities streams.

**National Digital Library (NDL):** It is a pilot project to develop a framework of virtual repository of learning resources with a single-window search facility. It includes educational materials ranging from primary to post-graduate level.

## Conclusion

With the above discussion it was concluded that LIS professionals in the age of information technology have shifted their roles from the custodian of books to the provider of services oriented towards digital information resources. For delivering effective information services, LIS professionals are well equipped with ICT infrastructure and get trained to use the ICT appropriately. They also need to possess requisite knowledge and skills to provide library services using the right resources. Library professionals need to be aware of all the ICT tools and search techniques for searching, organizing, and dissemination of information. ICT literacy models are helpful to generate awareness about ICT tools, selection of library automation software, a quick search of e-databases or e-resources and searching of online information. One of the main reasons why ICT literacy is utmost necessary for library professionals is that, most of the information is now available in electronic format.

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