

# Assessment of ICT Competencies of Library Staff: An observational Study at Public Libraries in Kota (Rajasthan) India

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**Abstract:** This paper intends to explore the level of ICT competencies, and the training needs for updating these competencies among library professionals in Kota (Rajasthan). It also looks at the various approaches utilized by these professionals for acquiring ICT skills and problems faced by them in this regard. The study revealed that the status of ICT competencies among library professionals in the region is satisfied. Online Library services are their main method in sharing information resources to their various users. Further training in establishing & maintaining digital library software and using institutional repository software is their foremost training need for updating their ICT competencies. The results can be utilized by library administrators to organize regular ICT training programs to train library staff in modern ICT resources as per their needs and to eradicate any hurdle in updating staff in ICT competencies. This Research provides valuable insight into the level of the ICT competencies of library professionals in Kota (Rajasthan), and provides a framework for the development of ICT competencies of library professionals in kota and elsewhere. It would lead to the provision of qualitative and standardized library services to the patrons and would enable library professionals to benefit from modern ICT resources in the field of library and information science.

**KEYWORDS:** Assessment of ICT, ITC Competency, Library Science, Public Library

## Introduction

In reflection to the, Itsekor and Ugwunna (2014) emphasized that ICT has transformed the face of librarianship as the role of library and information science professionals shift from custodian of books to information professionals, with the responsibility of creating, processing, storing, manipulation and disseminating information electronically. ICT provides efficient and effective ways in executing information related activities. It provides convenience in terms of usage for the users; speedy, accuracy and preciseness of information.

Information and Communication Technology (ICT) is one of the greatest inventions of mankind which played unprecedented roles in changing the landscape of human and organization activities around the globe from which libraries are not exempted. Oyewumi, Akanbi and Lawal (2018) stated in their research titled ‘‘assessment of ICT competencies of library staff in kota, Rajasthan India. Dhanavandan, Esmail, Mohammed and Nagarajan (2012) stressed that ICT has drastically changed every facet of human endeavors of which library is not an exception, such that libraries are now deeply engaged in digitization of almost all library resources in order to provide a fast, interactive and dynamic information services to users. In reflection to that, information has therefore been disseminated speedily around the globe due to advancement in the channel of communication. Library resources are being transformed from print to digital and web resources, which is being used extensively and subsequently resulted in tremendous growth of information dissemination and service delivery in the library. The use of Information and Communication Technology (ICT) facilities in performing library functions are becoming very useful in the libraries because it makes service delivery to the user faster and more efficient. Nwachukwu (2005) defined ICT as a device or tool that allows for the collection, storage, processing or the communication of information. Ekoja, (2007) was of the opinion that ICT is a kit or equipment used for capturing, processing, storing and accessing information. Chrisita and Shoko (2010) defined ICT in a library context to mean the application of various technologies such as computer, retro-graphics, audio-visuals and other electronic devices for storage, reproduction, and dissemination of information in a library environment. In a similar vein, Vijayakumar and Vijayan (2011) defined ICT as the application of computers and technologies for acquisition, organization, storage, retrieval, and dissemination of information. Malanga (2015) explained the definition further to mean a revolution that provides the platform and technical means of handling information and communication. With the definitions above, ICT can rightly be said to be a catalyst for generating, processing, storing and disseminating information. Seena and Sudhier-Pillai (2014) emphasized that early 70s usher in the evolution of library automation process and late 90s, the invention of internet bring about web based services and digitization of library resources while the latest invention of last decade gives birth to Web 2.0 that revolutionize information service delivery. ICT revolutionized many traditional library practices which in-turn posed a new challenge, opportunities, and competition for LIS professionals (Narasapa & Kumar, 2016). Complementing the above assertions, was Itsekor and James (2012) who underscored that evolving technologies, globalization and digitization, as well as information explosion of today information society, led to library automation, Web 2.0 and Library 2.0 applications, which can be simply stated to means that the traditional ways of doing things in the library are giving ways for digital operations. This occurrence tasked LIS professionals to keep abreast of the latest technology advancement as well as their applications to library operation. ICT skills are imperative such that, they now have an enduring impact on career

development of LIS professionals. It is very crucial for library and information science professionals to acquire ICT skills in order to be more competitive in the face of competition with other professionals. Without adequate ICT skills, librarians would not be able to cope with information explosion of today information society. The beginning of 21st Century ushered in evolutionary change to the ways users' access information, such that they now demand for anytime anywhere communication and access to electronic resources Okiy, (2010). This development brought revolutionary changes to modes and methods of information storage, retrieval, and transmission. During the ancient and medieval era, the functions of the libraries were majorly collection and preservation of information carriers, but advent of twenty-first century, extends the roles of libraries from mere preservation to provision of access and dissemination of information Kehinde and Tella (2013). Ezeani and Ekere (2009) are of the opinion that the use of ICT encourages diversity and built a foundation for continuous innovative learning in the academic environments, it also reinterprets traditional library skills, and explore new ways of putting these skills to work through the effective use of ICT. The effectiveness of library services in this century largely depends upon Information and Communication Technology (ICT), such that libraries with necessary infrastructural capabilities can tap the ICT skills of their staff for development. This evolving development in library world now tasked libraries to develop their information infrastructure and as well develop the skill of their workforce to one that meet the information need of today users who are millennial and technologically savvy. ICT plays a significant role in shaping and revamping information service delivery of libraries and this call for the need for LIS professionals to acquire core ICT competency and skills that will enable them to overcome the threat of becoming obsolete in the face of competition in today digital environment where libraries operate Narasappa & Kumar, (2016). The above is in consonance with Ferdinand (2011) assertion, who earlier stressed that the situation on the ground requires that library and information science professionals to be up and doing because potentials of information age can't be realized without proper acquisition of ICT skills.

Libraries are very positive with the integration of ICT tools into library operations such that most of them are now equipped with information infrastructure and various ICT based resources and services (even though not adequate in some cases) to cater for information need of users. Bansode & Viswe, (2015), But no library can effectively deploy this information infrastructure without a competent workforce. Many studies have been conducted on ICT competencies among LIS professionals, prominent among them are (Itsekor & Uguanyi, 2014; Narasappa & Kumar, 2016) but there is still scarcity of localized study on assessment of ICT competencies of library staff in many libraries. So filling this empirical gap is what this study is geared towards achieving. In corroboration with the above, Tyson (2007) opined that with the current scenario, library staff needs to be trained to serve the present generation of users, who desire to have access to information anytime, anywhere. In reflection to that, uncertainty still exists whether library staff possesses adequate competencies to operate ICT facilities effectively. Some library users are adopting electronic habits, making increasing use of the new ICT including computers, the Internet, the Web, Intranet, Extranet, and other technologies. As a result, library users are placing new demands on their libraries. They require access to the latest information, updated information resources and access to ICT facilities that they could use in their research work.

#### **Benefits of Using of ICT in the libraries**

- i. Provide speedy and easy access to information
- ii. Provides remote access to users
- iii. Provides round the clock 24×7 access to users
- iv. Provides access to unlimited information from different sources
- v. Provides information flexibility to be used by any individual increased flexibility
- vi. Provides increased flexibility
- vii. Facilitates the reformatting and cumbering of data from different sources.

It is expected that the finding of this study when completed would be useful to practicing librarians (as well as those in training) by exposing them to ICT competencies they need to possess in order to perform optimally in the profession and develop their competencies in such area

#### **ICT Competencies**

There is no universally accepted definition of ICT because the concepts, methods and applications involved in ICT are constantly evolving almost on daily basis. It is difficult to keep up with the changes - they happen so fast. A good way to think about ICT is to consider all the uses of digital technology that already exist that is been used in helping individuals, businesses and organizations to manage information. ICT covers any product that is capable of storing, retrieving, manipulating, transmitting or receiving information electronically in a digital form. The term ICT is also used to refer to the convergence of audio-visual and telephone networks with computer networks through a single cabling or link system. Gurari (2009) defines ICT as a combination of computer hardware, software and telecommunication devices such as telephone system, modem, router, optic cables, satellite communication system etc. Murray (2011) pointed out that ICT is an extended term for information technology (IT) that include the integration of telecommunication devices such as telephone line, wireless signals, computer hardware and software which encompasses storage device and audio-visual systems that ensure access, storage and dissemination of information. In a similar vein, Zuppo (2012) stressed that ICT is associated with technologies that provide access to information through telecommunication gadgets and appliances. He further stressed that ICT covers any product that store, retrieve, manipulate, transmit and receive information electronically in digital format.

#### **Competency**

Competency on the other hand is the ability to do something successfully and efficiently. It is the skills, quality, the ability needed to perform a task. It also tends to describe the level of proficiency of an individual in executing a particular task or job. Competency is the ability, skills, attributes, proficiency of an individual to perform or do something efficiently. Ojiegbe (2010) view competency as a way of demonstrating the knowledge, skills, experience, and attribute of an individual to carry out a defined function successfully. Competency is a set of predefined skills that provide a structured guide against which proficiency of an individual

performance in executing a task is been measured and evaluated. Competency could be seen as a combination of 6 | P a g e practical and theoretical knowledge, skills, behavior, and value needed to improve on a performance. It could also be seen as a state or quality of being adequately equipped and qualified to perform a given task. In corroboration to the above, Larzen (2006) stressed that competency is a combination of theoretical knowledge and practical experience that form the hallmark of individual skills in taking the right action in executing a task. Ferreira et al. (2007) emphasized that competencies include knowledge, skills, abilities, and attitudes that should be acquired through education and training. Competency strives to measure the level of professionalism of an individual. ICT Competency of library staff is a measure of their capacity to make appropriate use of ICT tools for information selection and acquisition, organization, and storage, retrieval, and dissemination. In reflection to that, Marshall, Taylor and Yu (2003) contend with two type of competencies for librarians: first are professional proficiencies which as to do with knowledge of information resources, information technology, leadership and managerial skills and research; and secondly competencies representing a set of skills, attitude and value that emphasize continuous learning throughout librarians' career as well as ability to cope with change. In reflection to the above, Gulati and Raina (2000) expressed that competency requires of librarians include knowledge of print and electronic information resources.

### **Library Science**

Library science (often termed library studies, bibliography, and library economy) is an interdisciplinary or multidisciplinary field that applies the practices, perspectives, and tools of management, information technology, education, and other areas to libraries; the collection, organization, preservation, and dissemination of information resources; and the political economy of information. Historically, library science has also included archival science. This includes how information resources are organized to serve the needs of selected user groups, how people interact with classification systems and technology, how information is acquired, evaluated and applied by people in and outside libraries as well as cross-culturally, how people are trained and educated for careers in libraries, the ethics that guide library service and organization, the legal status of libraries and information resources, and the applied science of computer technology used in documentation and records management.

### **Public Library**

A public library is a library that is accessible by the general public and is usually funded from public sources, such as taxes. It is operated by librarians and library paraprofessionals, who are also civil servants. There are five fundamental characteristics shared by public libraries:

1. They are generally supported by taxes (usually local, though any level of government can and may contribute)
2. They are governed by a board to serve the public interest
3. They are open to all, and every community member can access the collection
4. They are entirely voluntary in that no one is ever forced to use the services provided an
5. They provide basic services without charge.

Public libraries exist in many countries across the world and are often considered an essential part of having an educated and literate population. Public libraries are distinct from research libraries, school libraries, and other special libraries in that their mandate is to serve the general public's information needs rather than the needs of a particular school, institution, or research population. Public libraries also provide free services such as preschool story times to encourage early literacy, quiet study and work areas for students and professionals, or book clubs to encourage appreciation of literature in adults. Public libraries typically allow users to borrow books and other materials, i.e., take off the premises temporarily; they also have non-circulating reference collections and provide computer and Internet access to patrons.

### **Services provided the Public Libraries in Kota Rajasthan**

1. **Book borrowing and lending:** The main task of public libraries is to provide the public with access to books and periodicals. The American Library Association (ALA), addresses this role of libraries as part of "access to information" and "equity of access" part of the profession's ethical commitment that "no one should be denied information because he or she cannot afford the cost of a book or periodical, have access to the internet or information in any of its various formats.
2. **Digital engagement:** It is Part of the public library mission has become attempting to help bridge the digital divide. As more books, information resources, and government services are being provided online (see e-commerce and e-government), public libraries increasingly provide access to the Internet and public computers for users who otherwise would not be able to connect to these services. They can also provide community spaces to encourage the general population to improve their digital skills through Library Coding Clubs and Library maker space. Almost all public libraries now house a computer lab. Internationally, public libraries offer information and communication technology (ICT) services, giving "access to information and knowledge" the "highest priority
3. **Classroom and meeting space:** Public libraries have a long history of functioning as community centres or public spaces for reading, study and formal and informal public meetings. In 1898, Andrew Carnegie, a prominent library philanthropist, built a library in Homestead, Pennsylvania, where his main steel mills were located. Besides a book collection, it included a bowling alley, an indoor swimming pool, basketball courts and other athletic facilities, a music hall, and numerous meeting rooms for local organizations. It sponsored highly successful semi-pro football and baseball teams
4. **Programming:** While in the past libraries were merely buildings to house their collections, most now utilize their space to offer programs or clubs regularly. Although some libraries will have similar programs with different names, such as book club, writing club or computer programs, most programs will differ based on the specific library and the community they serve. New studies have shown that librarians must research what their specific community needs, "because communities

differ, however, the ways libraries implement these services differ as well. The [example of service response] offered at one library may vary significantly from [the same example] offered by another library. The differences are perfectly appropriate if they result from a tailoring of services to address local needs.

5. Adult programs: Public Libraries and the Adult Education. Adult library programming in the United States initially had strong ties to adult education and adult literacy. Margaret E. Monroe traced these connections on the 25th anniversary of the U.S. Adult Education Act which was part of the Economic Opportunity Act of 1964. The American Library Association supported the "Adult Services in the Eighties" (ASE) project which replicated an earlier ALA 1952-53 survey, Adult Education Activities in Public Libraries by Helen Lyman Smith. etc

#### Various ICT-based services to the Library users

The following are some of the areas where library and information professional need to be competent in ICT in provision of library services (LISBDNETWORK, 2020):

##### 1. Web-based Online Public Access Catalogues (Web-OPAC):

The internet and web-based technologies have made it possible for the libraries to provide access to their catalogues globally. It helps the library users to access to information from anywhere in the world when OPAC is available on the internet. The library users also find it easier to learn and use the OPACs from different library systems. Web-based OPAC allows for linking to other information resources such as tables of content, full-text documents, author, title, publisher, publication year etc.

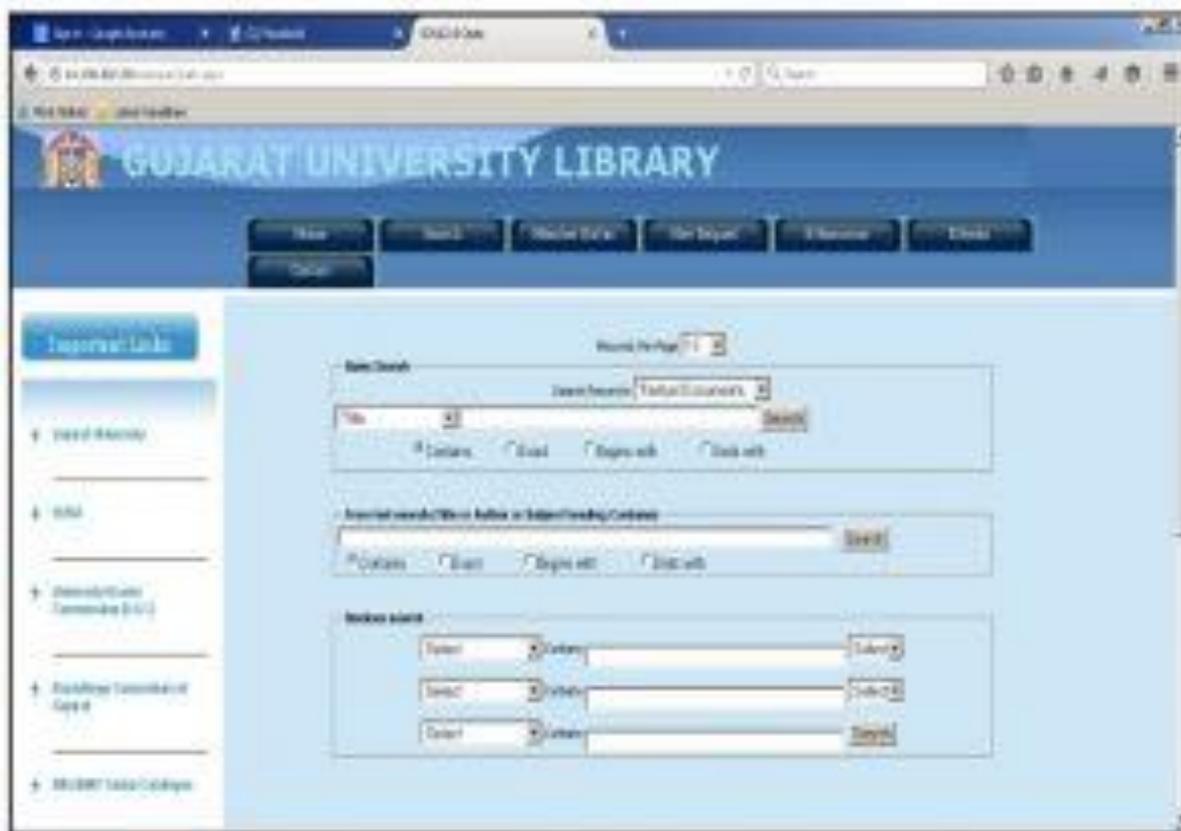


Figure-

##### Example of Web OPAC (Gujarat University Library, Gujarat State)

The Internet and Web-based technologies have made it possible for libraries to provide access to their catalogues on the local intranets, extranets and sometimes via the Internet. This arrangement, especially when the OPAC is available on the Internet, makes it possible for library users to access the facilities from anywhere in the world and for 24X7. This is possible because most library software systems now include Web-based interfaces to OPACs, as opposed to telnet-based access systems. Library users also find it easier to learn and use the OPACs from different library systems since they only have to know how to use one universal access client, the Web browser. Web-based OPACs also allow for linking to other information resources such as tables of content, full-text documents, and works/titles by the same author

##### 2. Digital Library Service:

Digital library provides a variety of digital information sources. It reduces the physical space, the user can access to information remotely and it also provides access to distributed information resources. Its advantage is that it has the ability to handle multilingual content. Using ICTs librarians are creating digital libraries, that is libraries where some or all of the holdings are available in electronic form, and the services of the library are also made available electronically — frequently over the Internet so that users can access them remotely Rosenberg, (2019). Digital libraries are made up of digital collections including document surrogates like bibliographic records and indexes in addition to full-text documents, videos, images some of which cannot be represented or distributed in printed formats. These digital works include both internal and external resources. In an academic environment, a digital library can provide students with access to educational materials, i.e. solved and unsolved problem sets, courseware modules (drills, simulations, models, virtual lab benches, and class presentation materials; while in a national library environment, digital

libraries opens up the information resources for access by library users located across the country. In most countries, national libraries are located in the capital cities and therefore, access to their resources is restricted mainly to those that can afford to travel to the capital city. Digital library resources of national libraries can be accessed even from remote places.

### **3. Electronic Document Delivery Service:**

The libraries are implementing ICT-based Inter-Library Lending (ILL) using networks to deliver copies of journal articles and other documents in digital format like PDF (Portable Document Format) to the users' desktops. It helps the users to access information which is not available in their respective libraries. It is one of the most useful services for users, specifically research scholars of remote areas.

### **4. Institutional Repository Service:**

Institutional Repository (IR) is a set of services that a university offers to the members of its community for the management and distribution of digital materials by the institution and its community members. It is most essentially an organization committed to the stewardship of these digital materials, including long-term preservation where appropriate, as well as organization and access or distribution Lynch, (2009). It provides citation features, easy access to the content and the content can be stored permanently. In addition to materials that are acquired from outside, university libraries also collect a lot of materials published locally. Most university libraries have special collections of local materials such as theses and dissertations, research reports, examination papers, conference papers, newsletters and seminar papers, journal articles by academic members of staff. ICTs have made it possible to provide access to these resources in full text, accessed via the institutions' intranet, extranet or over the Internet. This is being done through Institutional Repositories (IRs). An institutional repository is defined as a database with a set of services to capture, store, index, preserve and redistributes an institution's research outputs in digital formats.

The objectives of an institutional repository are:

- To provide open access to institutional materials, i.e. research reports, articles, technical reports, annual reports, seminar papers, etc
- To offer the opportunity for long-term storage and preservation of digital assets
- To aid the management of often easily forgotten (grey) literature such research reports, technical reports, etc.

Institutional repositories involve different stakeholders, each bringing different contributions to the repository, and librarians are among the key stakeholders in institutional repository projects. Librarians bring skills and standards required to manage digital information resources and work towards continued preservation of and access to digital resources.

### **5. Current Awareness Service- CAS:**

Current Awareness Services has been an important means for keeping the users up to date in their areas of interest. A current awareness service may be as simple as a copy of the table of contents or a bulletin containing bibliographic records, of articles selected from the current issues of journals and other material, and usually organized by subjects. Libraries now compile current awareness bulletins using a predefined search strategy and running on the database either on CD-ROM or online periodically and getting the desired output. Subject to copyrights, the output can also be stored on a local system, and disseminated online (internet, intranet) and offline (print, CD-ROM, email). Table of contents of most journals is available free from the publishers' sites. Some publishers even offer free email update of the table of contents. A large number of electronic publishing sites or portals now offer current information via email to registered users. For example, one can register on New York Times newspapers to receive a summary of news on daily basis.

The Internet has enabled a lot of innovations in contents, methods of production and distribution of current awareness products. Tools such as Listserv, Weblog, Webzines, and e-newsletters are common. Listserv gives the latest information, hot topics, ideas and opinions, a chance to discuss issues, a source of advice and assistance. Weblogs literally log the web. They review, select and package the latest relevant information, in a subject area. Some examples of web-based current awareness service are The NSDL Scout Report for Math, Engineering, and Technology (<http://scout.wisc.edu/Reports/NSDL/MET/Current/>) and Free Pint ([www.freepint.com](http://www.freepint.com)) are examples of web-based current awareness services.

### **6. Audio-Visual Services:**

Audio-visual materials are important sources of information, education, and entertainment. Many libraries particularly media libraries and large academic and public libraries hold audiovisual material such as music, films, pictures, and photographs etc. Old media of LP records and tape slide have long been replaced with audio and video tape. The new multimedia of an audio CD, Video CD (VCD), and Digital Video Disks (DVD) have the advantage of higher storage capacity, random access and longer life than audio and video tapes and cassettes. Many libraries allow their members to borrow these. Multimedia documents can now be played on standard PCs, stand-alone or networked. Recent developments in storage media, compression, and encryption technology have made it possible to store a large number of multimedia documents on the hard disk and disseminate through the internet. Software such as Quick Time Player, Microsoft Media Player etc is now freely available to play or see these documents in a browser. You will learn more about various hardware, software and document formats that are used for creation, storage, distribution and use of digital multimedia documents later in the course.

### **7. Online User Education:**

Libraries are using ICTs, especially the Web, to implement online based bibliographic or library use (library literacy) programmes targeting their clients. Among others, these programmes include online or CD-ROM based tutorials on searching online resources and virtual tours of library collections, and these are mainly accessed on intranets, extranets or the Internet. Use of ICTs enables libraries to avoid problems associated with the use of lecture-based approaches or library orientation programmes. Problems such as dealing with large numbers of students or having a shortage of staff to deliver the programmes or too little time to deliver so much information to students. In addition, ICTs offer students an opportunity to follow the programmes at their own pace in their own time.

### **8. Readers' Advisory and E-Reference Services:**

ICTs offer libraries an opportunity to provide Web-based versions of readers' advisory services and reference services. These include services such as informing users via the Web about new releases or additions to the library collection, selective dissemination of information (SDI), announcements, and facilities for readers to interact with the reference staff (Virtual Reference Desks), etc. In academic institutions offering courses via distance learning, libraries are able to support their students through ICT based advisory services.

#### **9. Electronic theses and dissertations (ETDs):**

Related to institutional repositories, especially in university libraries, is the provision of access to full-text copies of Electronic Theses and Dissertations (ETD). Without ICTs it has been impossible to access full-text copies of theses and dissertations from a remote location. While in developed countries, theses and dissertations have been made available on microfiche and microfilm, in sub-Saharan Africa, the only way to have access to these resources has been by paying a visit to the libraries where the collections are housed. As a result, theses and dissertations in Africa have largely been closed collections accessed mainly by students and researchers residing in the host country. ICTs have changed this arrangement. Some universities libraries in the SCANUL-ECS region, especially in South Africa, are implementing projects aimed at providing access to full-text copies of ETDs and these include the libraries of the following universities: MSUB, GU, and HNGU.

#### **10. Online chat Services:**

Online chat may refer to any kind of communication over the Internet, which offers an instantaneous transmission of text-based messages from sender to receiver. In Libraries, it can be used for online reference service and real-time consulting service. Online chat may address as well as point-to-point communications as well as multicast communications from one sender to many receivers.

#### **11. Electronic Books Service:**

The elements that are considered as importing for the use of E-books in an academic library are the Content, Software and Hardware Standards, Protocols, Digital Rights Management, Access, Archiving, privacy, market, pricing and features. Electronic books (e-Books) are one way to enhance the digital library with global 24X7 access to authoritative information, and they enable users to quickly retrieve and access specific research material easily, quickly, and effectively.

#### **12. Electronic Journals:**

Service Electronic journal may be defined broadly as any journal, magazine, newsletter or type of electronic serial publication which is available over the internet and can be accessed using different technologies such as the World Wide Web, Gopher, FTP, telnet, e-mail or listserv. Many publishers who offer subscriptions to print journals, sometimes also offer a subscription to the electronic version of the journal free of charge. Some of the publishers who are providing e-journals include Emerald, Elsevier, Sage, Springer, EBSCO, J-Gate, John Wiley, etc.

#### **13. Electronic Mail (E-mail) Service:**

This medium can also be used to send and receive emails. This is commonly and widely used with the internet facilities. E-mail is very useful for sending messages to and from remote areas with the enhanced network. Further, it is also useful in various aspects of the library environment. Thus, it may be stated that e-mail may play a significant role in information dissemination services.

E-mail can be used as a tool to communicate with the users, to serve them by giving EDDS (Electronic Document Delivery Service). It is a web-based excellent media and most probably the most popular media. And we the library professionals can use this web medium for various purposes especially for delivering some web-based services. It helps to contact the publisher, vendor etc.

#### **14. Internet Service:**

As a source of serious subjects of the universe of knowledge, has become information superhighway and opened the floodgates for scholarly communication. The Internet is a truncated version of inter-networking, which refers to interconnecting two or more computer networks. The Internet is described as a worldwide network of computer and people. It is an important tool for global online services. The emergence of Internet offers very high bandwidth, which will widen the scope for information processing and dissemination as never before. Internet connects universities, colleges, schools, and other educational institutions for information sharing and exchange. Access to information through the Internet has changed the total scenario of librarianship.

#### **15. Reprographic & Micrographic Service:**

These technologies are still widely used technology in libraries globally. Most of the research libraries have a reprographic machine and provide photocopies of any document on demand. Microform is a generic term for all information carriers which use microfilm or similar optical media (including study) for the high-density recording and storage of optically encoded information in the form of micro images of the printed document, bit patterns or holograms.

#### **16. Document Scanning Services:**

Scanner is important equipment in the modernization of library. It is useful for scanning text, image and content pages of books and providing great help for establishing a digital and virtual library.

#### **17. Library Network Service:**

The important function of the network is to interconnect computers and other communication devices so that data can be transferred from one location to another instantly. Networks allow many users to share a common pathway and communicate with each other.

#### **18. Open Source Software Service:**

Open Source Software or the OSS is freely available computer software, which allows altering the source code and customizing the software to anyone & for any purpose. In the last few years we have seen the development of a number of ILS products in the open source world such as Integrated Library Systems (ILSs) like Koha; Digital library software, like Greenstone; Digital Repository Software, like DSpace; Content Management Software, like Moodle, etc.

#### **19. Library Portal Service:**

A library portal is a single access point combining the library catalogues subscribed database, electronic journals etc. Library portal meets the individual needs of the users and the portal is now the standard interface to generate library resources and services through single access and management point for users. Librarians are becoming increasingly aware that the multiplication of electronic resources is a problem for end users. Users find it difficult to have the most appropriate database or resource to search for their information need. Library portal reduces the barrier of users to remember various log-on. Example: Jayakar Library Portal.

#### **20 Ask-A-Librarian Service:**

Ask-A-Librarian services are Internet-based question and answer service that connects users with individual who possess specialized subject knowledge and skill in conducting precision searches. Most "Ask-a-Librarians" services have a web-based question submission form or an e-mail address or both. Users are invited to submit their queries by using web forms or through e-mail. Once a query is read by a service, it is assigned to an individual expert for answering. An expert responds to the query with factual information and or a list of information resources. The response is either sent to the user's e-mail account or is posted on the web so that the user can access it after a certain period of time. Example: Oxford College Library.

#### **21. Bulletin Board Service:**

A bulletin board is an electronic communications forum that hosts posted messages and articles connected to a common subject or theme or interest. It allows users to call in and either leaves or retrieves messages. The messages may be directed to all users of the bulletin board or only to particular users. But all messages can be read by all users. Several libraries are using bulletin boards for their web-based library services. The bulletin board system is also used as an interactive interface to invite suggestions on activities and services of a library. It can also be used as an interface to distribute library services. A Bulletin Board System, or BBS, is a computer system running software that allows users to connect and log in 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 messages with other users, either through electronic mail or in public message boards.

#### **Challenges in handling ICT facilities in the Library**

LISBDNETWORK (2018) itemized the following challenges:

**1. Changing role of libraries and librarians:** Most and more library users are using digital technologies and have access to global information resources via the Web. Unfortunately, the huge amount of information available on the web is generally overwhelming information users. Further, a large number of Web users are still not able to use the web efficiently.

**2. Funding of libraries:** Due to serve budget cuts and high price of books and journals subscriptions, libraries are faced with no options but to reduce expenditures on books and journal subscriptions.

The introduction and use of ICTs in libraries has not made the situation any better. Money is required to maintain and upgrade the equipment and software, pay software license fees, pay for access to electronic journals and online databases, pay for internet connections, etc.

**3. Copyright management:** Digitization and provision of access to digital collections accessed via electronic networks, especially the Internet, is presenting bigger challenges to librarians. Unlike print-based documents, digital-based information resources can be accessed from anywhere via electronic networks, copied several times, manipulated (i.e. edited, modified, repackaged, etc.) or deleted.

The ease at which digital information resources can be copied and manipulated may result in governments, under pressure from information producers, to put in place rigid copyright laws in which the rights of the right-holder are increased at the expense of users and this may affect the provision of access to digital information sources in libraries.

**4. Information access:** Whereas libraries generally contain and provide access to selected information resources, this is not the case with information accessed on the web. Distribution of pornographic materials and information produces for deliberate disinformation is very easy to do on the web and this presents problems to many librarians on how to exclude access to such types of information, especially on Internet workstations located in libraries.

**5. Preservation of digital information resources:** The print-based library and archives environment, as opposed to the digital information environment, has evolved over centuries. Preservation methods and formats for print-based documents have also been developed and tested. There are print-based documents are over 2000 years old in the world today and can still be read. The digital information era is in its infancy and already some of the information is stored in formats or media that cannot be accessed or read.

**6. Legal deposit:** In the print-based environment, producers of publications are required by law to deposit copies of their documents with the national library or national archives, or any agency designated to receive and preserve such publications. In the digital information environment, the situation in many countries is still not clear as to who is responsible for the long-term preservation of digital information resources.

#### **Possible Solutions to the Challenges Associated with the Application of ICT in the Libraries**

- i. Providing more ICT resources constructing well-furnished ICT labs;
- ii. Proper maintenance of the available ICT resources;
- iii. Reduction of Librarians' workload
- iv. Training the Librarians on integration of ICT in Facilities
- v. Having power backups in case of power failure
- vi. Providing stronger internet and the Availability of the e-content to be used in the ICT integrated services.

#### **Conclusion**

In this research, sources of ICT skills acquisition to include: library schools, computer training centres, workshops and seminars, personal training, attending webinars and watching illustrations on YouTube as well as receiving guidance from friends and relatives. But Researchers observed more on acquiring additional qualification in computer science. Tight working schedule,

personal trait, need more experienced staff, more ICT training and library science curriculum for adequate ICT training and competency, were some of the constraints confronting library staff to acquire adequate ICT skills.

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