CHAPTER - 1

INTRODUCTION

1.1 Introduction

Most of mans needs lead to the new inventions. Humans utilize their brain to adapt to the environment which ultimately gives birth to new tools, techniques and machines to improve the quality of life. In ancient time, we had only natural materials and used wood, and stones for making tools and animal skins for clothing. We soon discovered to spin threads and started weaving the cloths. We started forming society, villages & town and started to begin to weave natural fibers together to make cloth. These practices were gradually improved. Since last two centuries, there has been a great revolution in technology especially in the field of information technology to pass the information from one to another corner of the globe. Passing of information used to occur through paintings on cave walls. This kind of art of writing developed from an early and simple picture to recording information and knowledge. Men were able to record their thoughts with the use of pictures and communicated with each other. The pictures were gradually made simpler until they became symbols. Knowledge could be recorded in handwritten books after the invention of the paper. Later, printed books were made available and now they are omnipresent in the form of e-books in digital format. We are enjoying the result of the efforts of great inventors and discoverers.
The transformation of library from physical to digital format has far reaching implications to the users, staffs and the quality of service provider. The emphasis of developing skills to curate and maintain digital databases has been timely acknowledged by world leaders and librarians as well. The opinion is shared by Shri Narendra Modi, Prime Minister of India, who in his speech in July 2014 remarked that “Today the world focuses on trade in goods but in future the core issue will be how to get skilled people. We need to work in this direction”\(^2\)

Majority of today’s libraries function through digital environment and will transform into digital-working age, which calls for urgent and effective action to skill development in college libraries, “which would need to capture the demographic potential of new librarian’s youth”\(^3\).

1.2 **Significance of the study**

In present situation, library experience many motivating challenges which affecting from applied to real-life role of library substance to a digital environment. Depending on the goals, different digital library software is offered for potential models to work with. For example, one goal might be to reproduce the traditionally library process with the help of latest technology, recreating the library experience using a computer. A very similar goal might deal with capturing knowledge about the skill itself, so that it can be simulated either in its real-life form or using technology. “Equal belongings implication at
present is the conduct of moving knowledge, experience, information and content from intangible and physical forms to digital representations

The traditional libraries emphasize on storage and maintenance of books and text records in physical forms which are likely to wear and tear over a period of time. Whereas, the digital library stores all the information, books, audio/visual information in digital formats. These kinds of information can be accessed remotely via computer networks unlike the physical movement that a user must undertake in order to access a traditional library. Hence, all the books or information into digital formats creates an accessible database would help to ease the access and productivity of the users. The digitalization of library resources also simplifies the management and record-maintenance of large physical library. This also enables the accurate handling of the resources by evens few staff persons. Additionally, the traditional library involves basically borrowing or issuing (circulation) of books which need of hard manual labor and a particular skill sets to maintain them. On the other hand, digital library aims at integrating the traditional library with newer technologies which helps the librarian to develop precise skill sets required to manage the digital repository records and also keep on the latest technological developments in order to afford the users with a final practice.

Apart from the zeal and acquaintance of the librarian, the digitalization of library resources is dependent upon various factors which affect the rate and extent of implementation of the decided reforms:
1.2.1 Management Response

The management decides the level of monitoring, funding and hence plays a pivotal role in enabling a librarian to upgrade their resources needed for maintenance and developing the digital resources. The management also holds the moral responsibility to allow grants and allocate the funds to the librarian to attend seminars and workshops in order to know the latest developments in the field. Prerequisite hardware, software and internet facilities provided by the institute help in accelerating the pace of implementation of the digital scheme in any institution or organization. The motivation and co-operation of the institutional head in regulation and procurement of necessary resources and timely services helps in smooth functioning of the digital repositories.

1.2.2 In-Tandem With IT Professionals

The librarian should be able to relay and communicate his thoughts and ideas appropriately to the IT-professional who can then prepare appropriate software needed for the maintenance and upkeep of the digital system.

1.2.3 Awareness of Copyright Act And Intellectual Rights

The librarian must be well-versed in the Intellectual Property Rights (IPR) laws, Digital Right Management (DRM) and guidelines of World
Intellectual Property Organization (WIPO) so as to affectively avoid plagiarism and maintain resources without violating intellectual rights.

1.3 Motivation behind the Research

The Researcher started his career as an Asst. Librarian in Biotechnology College and spent more than eleven years and familiar with DSpace digital library software. While working in Biotechnology College, researcher faced difficulties in getting the information about digital software, digital products, knowledge about different software and programming language using setup digital library, digital products arrangement, create metadata for searching different key words for smooth searching, knowledge about copyright, digital right management, study for different scanner and optical character recognition, coordination with digital library committee as well as computer expert team involve in development for digital library. Researcher wanted to showcase real scenario for professional skills development in digital environment and also organized workshop cum practical approach using DSpace software of learning to the college librarians. This motivation led him to do research on this subject.

1.4 Statement of the Problem

In view of the above facts, the statement of the study is entitled as “A Study of the LIS Professional Skills Development of College Librarians in Digital Environment: with special reference to colleges of Biotechnology in Gujarat”. It is hoped that the present study will provide insight into an appropriate approach regarding how far the Library and information science professionals
have been proficient to be side by side of the skill development in digital environment, their professional development tricks, whether their teaching in library and information science has helped them in usage the digital environment and their need for auxiliary learning and training in the LIS professional.

1.5 Essentials Features of Digital Environment

According to Kumar Naresh, important features of the digital environment are given below.

The various features of digital libraries are given below:

1. Usable anywhere, anytime.
2. Interactive.
4. Save human efforts for shelving, modification, bindery, and restore.
5. Library user cannot misplace e-resources
6. Save the time of user.
7. Multiple access

1.6 Need for LIS Professional for Skill Development in Digital Era

Digital libraries carry out functions that are without a solution with traditional position and that comprehensive assessment to digital library education. There are several “physical powerful reasons such as ease of access, ease of use,
relations, customization and use again to use digital libraries for education even when there are challenges in the digital and networking environment”.  

Digital library software has the probability to enable non-specialist people to conceive, assemble, build, and circulate latest information collections and arrangement with use of metadata for creation digital resource. A further key development is the Digital learning environment or e-learning, facilitated by the use of ICT, which has revolutionized lifelong education for learners of any ages. Educational Institutes has to make collections purposely for their students, collections that mix up information from special sources. Digital Library education is concerning the use of digital libraries in education, including rising areas of application and current and future technologies for creating and distributing digital libraries. They also educate about how to put up their own digital library collections for use in the syllabus. The digitalization is oriented towards low funds, methods of creation and maintain by “Creative Individuals and by Self Prepared Communities of Educators”.  

Day by day there is a change in labor oriented environment towards technology driven programme and the related works. Digital environment thus requires multidisciplinary cooperation and better levels of improvement and creativity. All types of Libraries are nowadays attractive universal information center, available and easy to get to the library users, where the users have a large numbers of information to retrieve and access the necessary information covering every discipline all over the world with a single mouse click on the
desktop. The users can enter in and can access any type of information round of clock at the remote place.

1.7 Training Requirement for Digital Library

Any institute creating online digital library, offline digital library or virtual library for library persons must attend major training programmes required for easy understanding of all the area of digital library and communication with library users for best practices. Major areas of training programmes for implementing and building of digital libraries are given in Table 1.1
Table 1.1: The major areas of training programmes for digital library

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Training Programmes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GSDL and DSpace</td>
</tr>
<tr>
<td>2</td>
<td>Digital Library and Web technology</td>
</tr>
<tr>
<td>3</td>
<td>Development of Digital Library</td>
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<tr>
<td>4</td>
<td>Digital Library initiatives</td>
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<tr>
<td>5</td>
<td>Digitization of resources</td>
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<tr>
<td>6</td>
<td>Open access repositories</td>
</tr>
<tr>
<td>7</td>
<td>Digitization and networking</td>
</tr>
<tr>
<td>8</td>
<td>Digital preservation</td>
</tr>
<tr>
<td>9</td>
<td>Advanced GSDL and RFID</td>
</tr>
<tr>
<td>10</td>
<td>Digital libraries and e-learning</td>
</tr>
<tr>
<td>11</td>
<td>TQM in digital libraries</td>
</tr>
<tr>
<td>12</td>
<td>Interfaces of digital library</td>
</tr>
<tr>
<td>13</td>
<td>Building of institutional archives</td>
</tr>
<tr>
<td>14</td>
<td>Creation and management of digital collection</td>
</tr>
<tr>
<td>15</td>
<td>Digital objects and metadata: preservation, harvesting and migration</td>
</tr>
<tr>
<td>16</td>
<td>Digital Right Management, copy right, IPR, plagiarism</td>
</tr>
</tbody>
</table>


Keeping in view the needs of creating a digital library based on the norms and directives of institutions like UGC and NAAC; the librarian should be able to
fully utilize the infrastructural and institutional resources and provide the users with a mixture of physical as well as digital library so as to attract and increase the usage of library resources. The librarian should also include system orientation, providing insight to the users about the facilities provided and ask for feedback so as to decide the changes which can be brought in the digital resources to improve the user experience. Likewise, the librarian should be well-versed with the regularly updated directives.

Keeping in mind the above stated tasks, the following research was aimed to highlighting the development of particular skill sets required in maintaining a library in digital environment.

1.8 Objective of the Study

(1) To know the LIS professional skills of college librarian in digital environment in Biotechnology colleges.

(2) To know the status of libraries in the Biotechnology colleges of Gujarat.

(3) To find out training needs of librarians for the development of digital environment in the Biotechnology colleges libraries.

There is a need for skills to exploit technology to use information effectively and for further implementation of the digital environment. Librarians face the challenges to “expand an intangible arrangement for information that integrates these concepts and skills maintained of library user learning”.8
1.9 Questions of the Study

In the view of present study objectives and need following questions are formulated.

1. What is the status of Digital Library Infrastructures in Biotechnology Colleges of Gujarat?
2. What is the status of E-resources in Biotechnology Colleges libraries in Gujarat?
3. What is the status of LIS professionals in Biotechnology colleges of Gujarat?
4. Which type of skills necessary for librarian to develop digital environment in Biotechnology colleges of Gujarat?
5. How the librarians develop professional skills in digital environment?

1.10 Scope and Limitations of the Study

The present research is an attempt to study the LIS professional skills development of colleges librarians in digital environment: with special reference to colleges of Biotechnology in Gujarat that provides important output for further improvement in the skills set of LIS professionals.

Following is the limitation of the study,

1. The study is limited to the LIS professionals working in the biotechnology college libraries in Gujarat.

1.11 Research Methodology

For the present study, the Researcher has gone through the literature review tried to understand the basic element can be utilized as a part of professional skill development for creation digital library. The Researcher also had
discussion with computer expert persons of different colleges as well as librarian for their point of view in interest and creation for digital library. Based on the process, researcher make a questionnaire and circular to Biotechnology College Librarians of Gujarat.

The present research is carried out in three steps:

1. Data Collection
2. Data Analysis and
3. Data Interpretation

Data Collection

For data collection researcher has prepared questionnaires for Biotechnology College Librarians and necessary data collection was done.

Samples

Gujarat is now home to 33 Biotechnology Colleges which are affiliated and following the curriculum of State University (32) and Gujarat Technology University (01) norms and standards. As the sample group is big, here the researcher has recorded both the survey responses by disseminating the questionnaire hand to hand and by mail to the respective groups.

Structure of Questionnaire

This questionnaire is divided into following sections

Part 1: Institution details

Part 2: Personal details (Library Professional)
Part 3: Infrastructure details

3.1 Library Collection

3.2 Infrastructure available in the library for digital environment development

3.3 Library Services

Part 4: Professional Skills Development

This part contains questions related to professional skills development parameters for the development of digital library and motivational factors that inspire the librarian.

Part 5: Prerequisite condition for digital environment development

5.1 Awareness of Different Servers

5.2 Awareness of Computer Softwares

5.3 Awareness of Digital Library Softwares

5.4 Awareness of Plagiarism Softwares

5.5 Awareness of Laws

Part 6: Participation in Seminars/workshops related in the Development of Digital Library

Part 7: Marketing methods of Digital library services and products
Differential Data Analysis and Interpretation

The Researcher has described the analyzed data for Librarians. Collected data has been classified, analyzed and presented in tabular format as well as in graphical form. For the purpose of analyzed the collected data, all the calculations have been performed in software Microsoft Excel and then necessary output is written. The present study has been undertaken for Library and Information Science Professional (LIS) skills development in 25 Biotechnology colleges’ librarians in Gujarat for the development of digital libraries. (Annexure-1 Questionnaire)

1.12 Citation Style

Giving references to support the statement giving in the research work is an important part of any study, but the all these reference should be properly acknowledge. For giving references in the present work “American Psychological Association” 6th has been followed.
1.13 Organization of Chapters

The thesis is presented in following six chapters

Chapter 1: Introduction

Chapter 2: Review of Literature

Chapter 3: Skills and Competencies of LIS Professionals in Digital Environment

Chapter 4: Scenario of Biotechnology in Gujarat

Chapter 5: Data Analysis and Interpretation

Chapter 6: Finding, Suggestions and Conclusion

Bibliography

Appendix-I Questionnaire

Appendix-II List of Biotechnology Colleges in Gujarat
REFERENCE


