LIBRARY AUTOMATION SKILLS OF COLLEGE LIBRARIANS USING SOUL 2.0 IN NORTH EAST INDIA

BY

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SUPERVISOR'S CERTIFICATE

This is to certify that the thesis entitled **"Library Automation skills of College Librarians using SOUL 2.0 in North East India"** submitted by Lalchatuana for the award of **Doctor of Philosophy in Library and Information Science** is carried out under my guidance and incorporates the students bonafide research and has not been for award of any degree.

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DECLARATION

FEBRRUARY 2020

I, **Lalchatuana,** hereby declare that the subject matter of this thesis is the record of work done by me, that the contents of this thesis did not form basis of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Instituted.

This is being submitted to the Mizoram University for the degree of Doctor of Philosophy in Library and Information Science.

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ACKNOWLEDGEMENT

This is my great moment that having completed this work after more than 30 years of service in Library profession. With so many blessings and endless grace, this chance I am getting from the Almighty God. Through His guidance and leading my life, this even can come through.

At the outset, I offer my sincere gratitude to Prof. Pravakar Rath, Professor in Department of Library and Information Science, Mizoram University, Aizawl and my elder friend, my Joint Supervisor Prof. R.K.Ngurtinkhuma, Professor, Department of Library and information Science, Mizoram University, Aizawl. Through their guidance and encouragement towards academic progress made me successful to complete the research work.

I wanted to offer sincere thanks to my Principal and my library staff of Govt. Hrangbana College, Aizawl who allowed me to do, not only allowed, but always encouraged to pursue and complete this work.

I would also like to extend a deep thanks to College Librarians in North East Region who provided primary information by answering the questionnaires on which the works became reality.

Lastly, but not the least, I am offering my thanks to my beloved wife Vanlalhnemi and my family who have given me endless co-operation and support by providing spare time to work for this study.

Aizawl, Mizoram   (LALCHATUANA)

The _____

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PREFACE

The Library plays an important role in Academic Society at Higher Educational institution, which is the hub of the teaching and learning activities where students, researchers and teachers can explore relevant resources of Information. In the age of information communication technology, computers are being used for day – to – day Library works which save the time of users and the Library Professionals, at the same time avoid duplication of works and make library service smooth and effective. The present research work entitled **"Library Automation skills of College Librarians using SOUL 2.0 in North East India"** *is an outcome of collecting primary data from selected 5 Colleges each of 8 states of North Eastern Region of India.*

The objective of the study is to evaluate the status and level of skills and benefits on Library Automation using ICT technology and application of Library Management Software SOUL 2.0 developed by INFLIBNET Centre, Gandhinagar, Gujarat. The present research work consists of 6 chapters in total followed by a comprehensive bibliography.

Chapter 1: *Introduction: provides the background of the topic of study, need for the study, objectives and hypothesis including research design, related literature and organization of the study.*

Chapter 2: *Library Automation: objectives, advantages and its application in Libraries.*

Chapter 3: *Status of Library Automation in North East Region using   SOUL 2.0*

 Chapter 4: *Library Automation skills in College Libraries using SOUL in North East Region.*

Chapter 5: *Data Analysis and findings.*

Chapter 6: *Suggestions and Conclusion.*

Bibliography: In order to maintain the uniformity in citation and reference, the Bibliographical standard i.e APA 6th edition has been followed by the scholar.

CHAPTER 1

INTRODUCTION

1.   Introduction:

Automating a College library is the process for better management of its functions and services. "Library automation in simple terms is the application of computers and utilization of computer based products and services for carrying out different library operations and functions".(Azeez T A, Abdul 2004) An automated College library can serve the teaching and learning community more effectively. A reduction in the time needed for routine operations can be utilized to provide better customized services to the users. Automation needs proper planning and active implementation. The modernization of the library helps the students and teachers to become skilled information users and life-long learners. A process of great change has been taking place today in libraries due to the impact of information technology and its application in library operations. We hear a lot about library automation in libraries and Library automation is nothing but application of machines viz. computers to the routine library house-keeping operations such as acquisition, serial control, cataloguing and circulation. Library automation may be defined as the application of computers to perform traditional library house-keeping activities such as acquisition, circulation, cataloguing, and reference and serials control. Automation is used to reduce the amount of staff time devoted to repetitive (and often less challenging) activities that must be done in any properly functioning library. It is to be remembered that, various library operations are automated, not the library as such.

1.1   Objectives of Library Automation:

- To maintain bibliographical records of all materials, in a computerized form.

- To provide bibliographical details through a single enumerative access point of holdings of a library.

- To reduce the repetition in the technical processes of housekeeping operations.

- To provide access to information at a faster rate.

- To share the resources through library networking.

- To implement new IT processes to provide high quality information.

1.2   **Need for Library Automation:**

From the above objectives, we can say that needs of library automation has several reasons. Use of computer is present in all areas depending upon its usages. They range from acquisition control, serial control and cataloguing and circulation control. They are also used for library manager's evaluation of reports, statistics, etc. For the good administration of the library, computers are used in all levels of work. Above all, the unique characteristics of computer made it the right choice of the library world. Computers right from the beginning are considered to aid man, in doing various operations.

Library Automation using specific software will help in the following:

- Capacity to handle any amount of data and information.

- Participating in network programmers and resource sharing.

- Flexibility in information search.

- Standardization of library procedures.

- Speedy processing of information and its retrieval.

- Provide better bibliographic control at local/regional/national and international level.

- Facilitate interdisciplinary nature of research and information.

- Economic implication of latest information technology.

- Overcome geographical and other barriers to communication.

Human ability capability and strength is limited to do repeated job for the whole day. There can be committed error and mistake from the library staff while doing circulation. Automation and networking of libraries are still in their formative stages in India. Majority of the College Libraries are not yet accustomed to automated environment. Library Automation covers the progress in the areas of librarianship as system analysis and design, planning, acquisitions, cataloguing, serial controls, circulation, and information retrieval. Library Automation brings together all records and document together. It will help the beginners of Library users for finding what they are looking for their information needs. On the other side, Library automation will facilitate the staff for providing speed, accurate and error free service to the library user. Computer is universally accepted tool to provide assistance to man in all fields. In the field of Library Science, the need for making use of computers i.e library automation was felt a must.

1.3   **Advantages of Library Automation:**

Different activities of a library are routine works in nature; a few are repetitive. Automation of these activities helps in managing the library's resources in a better way at the same time saving time, money and manpower. For example, once the bibliographic details like author, title, edition, publisher, price, ISBN number, etc. are entered at the time of ordering, the same data can be used for accessioning, cataloguing, OPAC, and Circulation.

Other important factors associated with automation are speed, and accuracy. One can imagine the time saved in literature search and in preparing bibliographies. Soehner (2015) said that "Communicating to employees the need for change, the process to be used, and the vision for the new department was crucial in resolving concerns and encouraging employees to come into agreement with the new direction". Automation also offers freedom from doing repetitive and routine works as well as enables providing efficient services properly and more efficiently cutting down time and improving productivity. Automation also facilitates generation of a number of reports for better decision making in the effective management of the library. Availability of various statistical and other usage reports and performance reports will ensure better appreciation from library users. For examples, vendor performance analysis is possible. Subject-wise or project department-wise budget can be monitored. Circulation data can provide information on titles that are in great demand so that more copies can be procured if needed. Many current awareness services like current additions, contents of books and journals, etc. can also be provided to users. (Moorthy, 2004).

1.4 **Library automation in the North-East Region using SOUL 2.0:**

In the field of College and its library development as well as Library Automation, Northeast states are still lagging behind as compared to other states in India. Among the Northeast states, Assam the oldest state is the most advanced in Library Automation. Other states like Manipur, Nagaland, Tripura and Sikkim were for behind in Library Automation. The table given below – available in www.inflibnet.ac.in showed the picture of Library automation using SOUL 2.0 in North East Region.

SOUL status as on 1st April 2000 to 31st in North East Region:

Sl.No   Univ/College : state-wise Nos of Installation

1.	Arunachal Pradesh	001
2.	Assam	152
3.	Manipui	014
4.	Meghalaya	004
5.	Mizoram	022
6.	Nagaland	009
7.	Sikkim	002
8.	Tripura	002
	Total	206

As per the record available from INFLIBNET website mentioned above, it can be seen that there are 206 installation of SOUL in the North Eastern States. If we look at this figure, Assam has highest record of SOUL installation reaching 152, Mizoram as the second highest having 23 installation and Manipur have 14.

1.5 Review of Literature:

There are a good number of literatures available in this area of study. The scholar has made an exhaustive survey of literature in the field of Library Automation from different sources so as to get abreast with the present research problem. The literatures available in different forms have been scanned from published documents as well as e-resources in the area of this study.

Ahmed, Hilal (2013) *Automated book acquisition system: a case study of Central Lib*raries *of IIT Delhi, IIT Kanpur and Kashmir University;* Gyankosh: The Journal of Library & Info. Management, Vol.4 No.1 Jan – June 2014 available at www.indianjournals.com; accessed on 7.7.2015.

Ahmed, Hilal (2014) – *Library Software Awareness: a survey of OPAC vs Card Catalogue in IIT Delhi;* DESIDOC Journal of Library & Information Technology; Vol.34,No.4(2014) available at http:://dx.doi.org/ 10.14429/ djlit.24.6164 access on 7.7.2015.

Ahmed, Hilal, (2014), *Library Automation in India: a survey of information retrieval system of Central libraries of IIT Delhi, IIT Kanpur and Kashmir University;* International Journal of Digital Library Services Vol.4; Oct,-Dec. 2014 Issue 4 – available at www.ijodls.in – accessed on 7.8.2015

Anas, Mohammead, Igbal, Jafar, Ahmad, Parves (2014) *Impact of automation on library services in selected management institutes at Aligarh,* Aligarh, Electronic Library; 2014, vol.32 issue 3, p296-307 available at http://iproxy.inflibnet.ac.in (N-LIST programme) accessed on 13.7.2015**.**

Babu, Preedip Blaji and Krishnamurthy, M (2013) *Library Automation to resource discovery: a review of emerging challenges: Electronic Library; 2013* Vol 31 Issue 4 p433-451 available at http://iproxy.inflibnet.ac.in; (N-LIST programme) accessed on 13.7.2015

Catherine B.Soehner (2015) *Leading change in libraries: a case study.* Library Management,; Volume 29, number 2, February 2015

Gadagi, V.S. (2011) – *Library Services and Automation Software (SLIM21: Lolapur University a case study,* Gonden Research Thoughts Nol.1 Issue 1, Aug.2011

Gbadamosi, B.O., (2012) *Emerging Challenges to Effective Library Automation and An E-library: the case of Emmanuel Alayande College of Education,* Oyo, Nigeria; Library Philosophy & Practice, Sept 2012, p1-11 available at http://iproxy.tinflibnet.ac.in (N-LIST Programme) accessed on 13.7.2015.

In this paper, the authors reveals that adoption of integrated library systems (ILS) become prevalent in the present era. These system enabled library staff to work, in many cases, more efficiently that they had in the past. The author also purport to fill the changing needs of Libraries.

In this research paper, the researcher shows the database of the Library used in the University and the number of records available in it. In this paper, it also highlights the availability of desktop computers, server, printer, scanner and other peripheral devices used in the Central and Departmental Library. It deals with the usage statistics of e-resources and other automation and digitization activities in the Library system. The researcher also investigate on the impact of the ICT on Library system and initiatives taken by the LIS professionals.

It was clearly mentioned the importance of an usefulness of traditional materials as well as manuscript to be well preserved with the help of

mechanical and technologies. The author also displayed the necessary equipments such as IBM server, desktop and laptop computers, scanner, camera etc. He also pointed out methods of preservations, digitization and kept in the standard formats to link with other for dissemination. In this paper, the author pointed out list of requirements of Digital preservation, methods, standards, advantages and barriers for Library automation and digitization.

It was revealed in this paper and agreed that a focus on digitizing, archiving, and providing access to unique and rare collections would be a significant objective for the library; and that this would be the main way to demonstrate the Library's significance contributions. It was further mention that redirecting the efforts of our IT personnel would be needed to accomplish this goal as no new staff would be forthcoming. This moved us to begin the process of organizational change that would bring the tow IT departments – Library IT and CMS – together.

Lakshiminarasimhappa, M.C and Veen, M.R (2014) *Digital Preservation in Libraries – Why and How ?* International Journal of Digital Library Services Vol.4, Oct-Dec. 2014 Issue-4; available on www.ijodles.in accessed on 7.7.2015

Large, (2006) ICT for Library and Information Professional: Training package for developing countries provides and skills dealing with application of ICT to library and information services. It shows to determine the automation requirement and introduces the strategic and technology planning tools such as creating a vision, system analysis, and design that are necessary in developing technology plan.

Mahapatra & Ramesh, (2004) in their edited document "Information Technology Application in Libraries: A textbook for beginners," shows how application of information technology in Libraries has brought remarkable change in librarianship and also highlights the use of computers in library operations. It gives the software's available for automation.

Manjunath, (2006) in his paper highlights the need for automation and how it can be implemented. It Provide information about library housekeeping operations, catalogue, email, internet and CD-ROM products and services. It provides criteria for selection of software and the barriers of Library automation possible solutions to overcome these barriers.

Nanda, (2005) *Library Automation*: Anmol Publication Pvt. Library Automation as a paper is being taught at BLIS and MLIS courses at various universities and institution. This book is designed as an introductory course to the above paper, encompassing vital information on all pertinent aspects.

Pratheepan, Thuraiyappah, (2012) Uva Wellass University of Sri Lanka*: Integrated Lirary Management System (ILMS – Open Source and Commercial Software; an Assessment of the Merits and Demerits;* Conference Proceedings of the University Librarians Association of Sri Lanka, 2012

Satyanarayana, (2003) "A Manual of Library Automation and Networking" Librarians and Information professionals are confronted today by rapidly changing environment. The major aspects to this change are

new technologies and the potential for new service which they bring. At the same time library users and their demands are also changing. They are now coming with new expectations and insist on high quality service. On the other hand the range and variety of information sources that librarians now deal with encompass print materials, CD-ROMs, online bibliographic databases in a variety of formats, electronic journals; digital text supplied form a number of vendors or downloaded from internet. Each of the format required both generic and highly specified skills for information search.

Tanwar, Sunder Singh (2014) *Automation of Library System : a case study of Maharshi Dayanand University,* e-library Science Research Journal; Vol.2 Issue 4/ Feb 2014, Google Scholarly article – accessed on 10.07.2015

The author carried out a study of "Library Software Awareness: a survey of OPAC vs. Card Catalogue in IIT Delhi, Kanpur and Kashmir University. The objective of the study is to highlight the library software awareness with special focus on OPPAC vs. card catalogue among the users of Indian Institute of Technology (IIT) Delhi, IIT Kanpur, and Kashmir University. The study also highlights the features of LybSys and Virtua software used by the selected libraries. The investigator has used questionnaire as a key tool for collecting necessary data for the study. Although the study covers a number of software packages, but virtua and LybSys software have been focused in detail. A wonderful finding in this study is that the Kashmir University has successfully installed RFID

technology through virtua; but the same is yet to take place fully in the selected IITs. All the selected libraries are still maintaining card catalogues, though used very less. The study will be useful to enhance the usage of OPAC and propagate Library Automation.

The author reveals in his paper "Integrated Library Managrary Management System - Open source and Commercial Software: an assessment of the merits and demerits", that an Integrated Library Management System is a computer based system used to manage internal and external resources including tangible assets, financial resources, materials and human resources. It performs library automation and collection development tasks broken down into different modules that Library of Library. It is built on a centralized database and normally utilizes a common computing platform and consolidates all library operations into a uniform and enterprise wide system. The purpose of this paper is to compare the merits and demerits of open source and commercial library management systems widely in use.

The paper highlighted guidelines, duties and responsibilities of Coordinator of Library automation. It also pointed out the minimum qualification and requirement, knowledge, skill and ability to become coordinator.

The purpose of the study is to investigate the impact of automation on Library management services of our selected management institutes at Aligarh. The investigator used questionnaire method for collecting data. The study reveals that 4 of 4 libraries are partially automated.

The purpose of this paper is to analyses the paradigm ships of library automation to resource discovery by exploring the applications of resource

discovery application is discussed. From the study, it was find that the growth of the India Library Automation industry is booming. The paper focused on the emerging scenario of resource discovery application with an overview of global.

The study carried out with the intent to highlight and compare the status of automation of book acquisition system in the Central Library, Indian Institute of Technology (IIT) Delhi; P.K.Kelkar Library, IIT Kanpur and Alama Igbal Library, Kashmir University. The study examines the general and selected features of acquisition module of LibSys and virtua software packages. The study revealed that there is no major difference in using the general features of acquisition module among the selected libraries. However, it was observed from the study that Central Library, IIT Delhi and Allam Iqbal Library, Kashmir University run parallel in utilizing equal number of selected features of their acquisition module, while as P.K.Kelkar Library, IIT Kanpur logs behind in this direction.

The study is to assess the current status of information retrieval system of tow leading institute of National importance and one of the first ISO Certified University Libraries in India to help other libraries also to enhance their information retrieval system. The study was undertaken with the focus to determine the satisfaction of users with the existing retrieval system. The study also highlights the features of different software packages used by the selected libraries.

This paper discusses the library automation and e-library project of Emmanuel Alayande College of Education, Oyo, Nigeria. It examines the evolution of the College, the planning process and the implementation of

libraru automation and e-library/internet facilities. The paper looks at different phases to which the project was divided and provides a detailed overview of how each phase was designed and executed which can help librarians make decisions about automation and e-library project.

This study aims to present a comparative study of Library Automation Software special reference to SLIM21. University Grants Commission and higher education expert are concerned about quality of higher education and they want to develop higher education infrastructure keeping in view the quality as measure. The paper provides Lolapur University data about Colleges and students, which have grown over a period of last 10 years. There are so many software develop in the field in management of library. It define best practices as an application of procedures to yield superior result which means way of doing things in particular organization as guidelines for good practices.

Web Junction Connecticut (2012) Coordinator of Library Automation, Danbury, *Automation/Technology Librarian Job Description,* 21 March 2012 EBSCOhost, INFLIBNET – N-LIST programme available at http://iproxy.tinflibnet.ac.in (N-LIST programme) accessed on 13.7.2015

Yongming Wang & Dawes, Trevor A.(2012) – *The next Feneration Integrated Library System: a promise fulfilled,* Information Technology & Libraries; Sep 2012, vol.31 Issue 3, p76-84 available at http://iproxy.tinflibnet.ac.in; (N-LIST programme) accessed on 13.7.2015

1.6 Research Gap: Scanning the most appropriate and relative literatures on the research problems, it is found that although number of literatures are available on SOUL 2.0 software, but there are few available on skills and competencies of Library professional working in the College of North East Region.

Therefore the present study shall fill up the gap of literature and be beneficial who are working librarians, educator and researcher**.**

1.7 Research Design:

1.7.1   Statement of the Problem:

Library is a trinity of Book, Readers and Staff. College Library which support and supplement Higher Education is an important component of Academic set up. Therefore, the organisation of library books and other documents, convenience of the users and staff performance depend much on automation. College Library's automation facilitates easy and smooth functioning in handling the Library resources and providing efficient services. The SOUL 2.0 developed by INFLIBNET Centre is a boon to College Libraries is India and more specifically Colleges in North Eastern Region. It is therefore essential to study the use of SOUL 2.0 in different Colleges of North Eastern Region in order to understand their applications, library management functions and provision of services. It is in this context, the present Research problem is under taken by the scholar to make a detail study on use of SOUL 2.0 by the College Librarians in the North Eastern Region.

1.7.2   Objectives of the study:

The objectives of the proposed research problems are as follows:

a) To understand the benefits of Library automation in College Library.

b) To appraise the impact of automation on efficient and effective library services.

c) To understand what automation, and networking skills developed by the library professionals in the changing information environment.

d) To obtain feedback from the College Libraries about the problems faced and solutions for same to overcome these barriers.

1.7.3   Significance and Scope of the study:

The scope of the present study is limited to 40 College Libraries of the 8 (eight) North Eastern States by selecting randomly 5 (five) each from one State who were doing library computerization using SOUL 2.0 Software. Software for University Libraries (SOUL) is a state-of-the-art integrated library management software designed and developed by the INFLIBNET Centre based on requirements of college and university libraries. It is a user-friendly software developed to work under client-server environment. The software is compliant to international standards for bibliographic formats, networking and circulation protocols. After a comprehensive study, discussions and deliberations with the senior library professionals of the country, the software was designed to automate all housekeeping operations in a library. The software is suitable not only for the academic libraries, but also for all types and sizes of libraries, even school libraries.

Since the automation skills is very much important for library professionals to provide efficient and effective services, the present study assumes great importance for College Librarians to develop their skills in SOUL 2.0 particularly in North Eastern Region. This reason has prompted me to take up this research problems.

1.7.4 Hypotheses:

The present research problems under the study are subject to following tentative hypotheses:

i) Library Automation skills enable professional competency development of library professionals to provide effective and efficient service.

ii) Lack of training in SOUL 2.0 creates obstacles in library management functions and caters users effectively.

iii) Lack of ICT infrastructure and authority support is the major problems of library automation in North East Region.

iv) Library automation and Networking can lead to access global academic resources and promote teaching-learning in and a research.

1.7.5 Research methodology:

In every research, methodology for collecting data is mandatory. The present study adopted the following methods for collecting data from the respective College Library of North East India.

1) **Questionnaire Method:** The scholar prepared a structured questionnaire to be distributed among the SOUL 2.0 using College Libraries 5 each of

North Eastern Region to solicit information with regards to application of SOUL 2.0 features and services which benefit the users.

2) **Interview method:** The scholar made an attempt to conduct special interview with College Librarian during on-site visit for collection of data. A personal interaction is always useful to get first hand information and problems encounter by the practicing College Librarians.

3) **Observation method:** The scholar during his study has undertaken on-site visit to selected College Libraries in the North Eastern Region where the SOUL 2.0 is in full operation and maximizing the benefit to the same. The experiences gained is more beneficial for this research problems under taken by the scholar.

1.7.6.   Data analysis and interpretation:

As stated earlier, the scope of the study is limited to College in North East States who are using SOUL 2.0 Library management software for their library automation. Data collected are scientifically analyzed and interpreted using quantitative data analysis software namely MS excel spreadsheet in order to derive appropriate findings and conclusion.

1.7.7   Organisation of study:

The present study is divided into six chapters as stated below:

Chapter 1   Introduction

Chapter 2   Library Automation: objectives, advantages and its application in libraries.

Chapter 3   Status of Library Automation in North East Region using SOUL 2.0

Chapter 4   Library Automation skills in College Libraries using SOUL 2.0 in North East Region.

Chapter 5   Data Analysis and Findings

Chapter 6   Suggestions and Conclusion

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www.inflibnet.ac.inwww.ijodls.in

CHAPTER 2

LIBRRARY AUTOMATION:

Objectives, Advantages and its Application.

2- LIBRRARYAUTOMATION: Objectives, advantages and its application.

2.1 Introduction:

A process of great change has been taking place today in Library due to the impact of Information technology and its application of Computer in the Library works. We hear a lot of about Library Automation in College Library as well. Library Automation is nothing but application of machines such as Computers to the routine Library House Keeping operation like acquisition, serial control, cataloguing and circulation.

The Library plays an important role in Academic Society at Higher Educational institution, which is the hub of the teaching learning activities where students, researchers and teachers can explore relevant resources of Information. In the age of information communication technology, computers are being used for day – to – day Library works which save the time of users and the Library Professional, at the same time avoid duplication of works and make library service smooth and effective.

Nowadays, the information seeking behaviour of Library users has dynamically changed. They want relevant, authentic information very quickly within a short time. This concept has posed challenges for Library professionals for marching towards Library Automation.

The word Automation is derived from the Greek word, "automose", which means something which is power of spontaneous motion or self movement. The term was first used by D.S Harder in 1936.

2.2 Library Automation: In India, some Libraries and Information Centres made efforts to automate their library routine and information services in 1960's with

punch card. After two decades , general computer was available at Kanpur and Bombay. INSDOC was the leader in experimenting with Computer for their application in documentation and information retrieval works in 1964. **Husain (2007),** said in his paper that, "The first use of computers in library and information centres in India was reported in 1965 at INSDOC, now known as National Institute of Science Communication and Information Resources (NISCAIR), New Delhi".

In the Library scenario, Library Automation means using of Technical equipments such as Computer and internet accessibility, Printers, barcode scanner etc. in the Library. The automation of a Library push up the quality and standard level and time saving of user and staff.

2.3 Need for Library Automation: There are several reasons for Library Automation. Human population is increasing year by year and day by day, and knowledge in all subject discipline also grows rapidly. In the mean time, Information explosion has resulted in the production of large amount of literature in every field of study. It is clearly known that human effort and ability is very limited to do the work   fast, to do job accurately, then using equipment and machine is demanded. The   Library Automation is necessary because of the following reasons:

2.4 Large collection: Accordingly, the print documents are coming to the Library in a huge number which is not possible for a Library to manage the collection manually.

2.4.1   In this information era and digital age, people are always busy in their own works. Even students are not having much time to spendin the Library,

they want to have direct information in a short time. They do not have patience to wait long queue in the circulation counter. That situation increased the necessity of Library Automation using proper software.

2.4.2   Providing better service is another reason for library automation. Knowledge is increasing day by day, syllabus is dynamically changing to cover new knowledge and ideas, students enrolment is increasing, working environment in different organisation become competitive, smartness environment is highly focused on, then, Library automation is highly important in today's world to provide better and accurate service to the Library users.

2.5   Objectives of Library Automation:

There can be many targets and objectives of Library Automation. In general, the objective of Library Automation is to up-lift the level of standard, to improve the services of Library towards better performance and for satisfaction of the users.

The following are the objective of Library Automation:

a) to provide an integrated information retrieval system that would not merely automate existing practices but would go beyond bibliographic records to give access to information and knowledge in all its forms – in book, journal articles, recorded music, videos, maps cuttings, photographs etc. This would be especially important in local studies and community information.

b) to take advantages of, and add to, work already done in cataloguing and indexing, nationally and internationally, giving users access to resources

outside the library, and other libraries and users access to our unique resources.

c) to create an information utility for the concerned people of attractive in nature, linking with other information networks and information sources.

d) to assist people to develop the information technology skills they need in a fast changing world, thereby a digital dividend rather a digital divide.

e) to make better use of human resources, by using computers to carry out routine functions, enabling staff to concentrate on meeting users' needs.

f) to facilitate future development, by making the best use of staff resources, thus allowing for more effective deployment of human and stock resources.

With these assumptions, objectives of library automation can be said that the target which library shall focus towards quality development to reach better services for the users. If the college library is automated nicely, it will be easier for the user to have their information requirement and will be time saving.

2.6 Advantages of Library Automation:

Like automation in any other industry, Library Automation reduces the amount of time and effort people invest in repetitive tasks and may allow for a better level of precision in some applications. Automation makes it possible to do more work with fewer staff, and that freed-up effort can be either redirected to other assignment.

There are several advantages of Library Automation.A machine readable catalogue prepared at the time of acquisition may be required

respectively for number of purposes. Library Automation has the following advantages:

2.6.1   Improved Customer Services:

Automation of the Library helps to take some of the workload off of Librarian and other supporting staff members in the areas of acquisition, cataloguing and circulation, which in return to them for better services to the users. In a library where student enrolment is big in number, they always make a queue to wait their chance. If the library is automated, the Circulation counter tackles the task by issuing book in short duration with the help of Automation system. In other way, students or Library user can do self-checking out of their own hand as well as return in the drop box in their own hand.

Such kind of process and work can be done in the automated library. As if the speed is fast, it will save the time of Library users and the library staff as well.

2.6.2   Cataloguing Improvements:

Automated Cataloguing standards MARC (Machine Readable Cataloguing) allow for quicker cataloguing of library items. Not only does this allow the librarian more time to dedicate to improving customer services, but it also makes the sharing of materials from location to location, less duplicate works of the library technical process, be much easier and much more affordable.

The bibliographical details which entered in the acquisition section can be again used in the catalogue main entry and added entry. This is highly useful improvement of the cataloguing works.

2.6.3   Easier Access:

Automation of Library makes it easier to find out book in the library. Library user can search the book from OPAC (Online Public Access Catalogue) which store the documents and records in the Institutional repository from any place through internet. Moreover, in the automated library, a specific device of RFID named also supported the 'hand held book finder', can also be connected to search and find easily the location of book in the book shelves.

Not only library automation makeseasier to find books and other documents in the library, but also makes it possible an online access through Institutional repository from any organisational website.The automation of Library will greatly increase the utilization for the researcher as well as the public. It will allow being more flexible when it comes to any increase in demand.

Another important advantage of Library Automation is easier to access through Library network. Same format of Digital records help more advantage to create Institutional Repository and then joint Library Network which can be accessible worldwide.

2.7   Collection Development and weeding out old:

The Automation of the Library allows towards an improvement in the various ways such as quantity of books and quality of materials that are

available in the Library. The fully automated library with internet facility, and having Institutional Repository and participated in the Library network, have a chance to share their resources, borrow books to one another through Inter Library loan has more facility to increase their collection which the user can get information. In the meantime, the library has a chance to know books which are not accessed in their library and process procurement to the publisher.

In an automated library, duplicate checking can be done easily during selection and purchase of books. In addition, books that are highly demanded by the user and books that are never used by the students also justifiable for weeding of old and unused books. Obsolete and out dated books of the syllabus can be found out. Hence additional procurement process and weeding outdated onesis easier in an Automated Library. It can be said that advantages of Library Automation prevails or can be found in every steps of library workflows.

2.8   Lasting Effects:

Automation of Library is also way of preparing the collection to become sustainable with the ever – increasing shift to technology based society, in terms of information dissemination, paired with the ever – decreasing amount of funding for Libraries.

The fifth Law of Library Science propounded by Dr. SR Ranganathan, said that 'Library is growing organism. The growth shall be in terms of Collection, size of building, number of staff and also amount of

fund provided to have proper growth. Moreover, technological growth and its application to the library become increasing.

Automation will help libraries who begin to struggle and are forced to lay off staff. Though the automation will help the staff towards less effort, now technology applied in the library will create necessity of new task, and responsibility among the experienced staff. Switching to an automated system allows libraries to add on features when they become available in the future, instead of having to do a complete overhaul of their collections and cataloguing methods.

Advantages of Library Automation can be extensively important for the development of Library. It will effect and support the work flow of the Library. Library automation with the help of information technology will help all the staff as well as the Library users.

2.9 Application of Library Automation in Libraries:

Modern society is Information society or an information age.Information is as indispensable as air is essential in our live. The instrument, the equipments with which the information flows is called Information Technology. Growth and development of technology toward channel of Information is also very fast. Quick and easy access to every require information is ofgreat importance especially for Libraries.

To comply with the rapid technological growth, the Library should be made up-to-date as fast as possible. Information technology based services to which library shall be applied were categorised and organised on the basis of

three main group such as, Apparatus and Amenities, Customer Service and Electronic Sources. Let us focus on the application of apparatus and amenities.

2.9.1 Computer: Computer based technologies have become dominant forces to shape and reshape the products and services the academic library has to offer. The success of the Information Technology enabled services in the library is based on the efficiency of the equipment provide in the Library.

2.9.2 Printing technology: Printer is primarily required in any automated library. They are complement with each other. Data, which are stored in a computer, can be read, but if it is not possible to be printed out, the availability may be half way. Physical printed media are paper and plastic transparency.

2.9.3 Barcode scanner: Barcode and its scanner are widely used in various applications. Library is one of the ideal placed to imply barcode scanner. Automated Library without barcode reader is not complete and will not be possible to function properly. The automation software generates the uniqueness of the particular document in a barcode. A barcode is a visual, machine-readable representation of data; the data usually describes something about the object that the barcode carries. Traditional barcodes systematically represent data by varying the widths and spacing of parallel lines, and may be referred to as linear orone-dimensional format and alpha numeric combination and lines. Application of barcode reader in a library will enhance speed and reduce error in the circulation centre.

2.9.4 OPAC: An Online Public Access Catalogue (OPAC) is an online database of materials operated in Libraries. A catalogue generated in a library through

the server computer can be accessed by the client's computer through the intranet of Library network. OPAC is a useful tool for librarians to find out the location of books through Inter Library Loan or network. The participating Library will necessitate the use of the same software or same format for the record file.

2.9.5 **CD-ROM**: A CD-ROM is a pre-pressed optical compact disc that contains data. Computers can read—but not write to or erase—CD-ROMs, a type of read-only memory. During the 1990s, CD-ROMs were popularly used to distribute software and data for computers. CD-ROM is a computer attached device which is useful for data transfer and record. It is device for data storage which can accommodate 194 MiB (8 cm), 650–900 MiB (12 cm). Many multivolume books in a digital format can be stored in one compact disc. If the library record is transformed into digital format and stored in the CD-ROM, it will occupy very much less space in the Library shelves.

2.9.6 **Scanner**: A **scanner** is a device that captures images from photographic prints, posters, magazine pages, and similar sources for computer editing and display. **Scanners** come in hand-held, feed-in, and flatbed types and for **scanning** black-and-white only, or colour. Scanner is one of the important instruments of Library Automation. Various record and documents can be scanned to transform into digital image format. Different types of scanners are available, flatbed to automatic book scanner.

[https://whatis.techtarget.com/definition/scanner, accessed on 1.6.2019]

2.9.7 **RFID**: Important equipment for Library automation is RFID. Radio-frequency identification uses electromagnetic fields to automatically identify

and track tags attached to objects. The tags contain electronically stored information. Passive tags collect energy from a nearby RFID reader's interrogating radio waves.

The microchip tag of the RFID is pasted in every book of the Library and the numbers assigned to the particular book or item are stored in the machine. This device is mostly used for protection of books from being stolen.

[https://internetofthingsagenda.techtarget.com/definition/RFID-radio-frequency-identifi...accessed on 1.6.2019]

2.9.8   Photocopier: The photocopier is a machine that makes paper copies of documents and other visual images – quickly and cheaply. It is one of the commonly used machines in the Library to provide the users information requirement.

Apart from the points mentioned, other equipments and apparatus for library automation may be Internet, Library website, and chat service can be practiced from Library to one another. The working environment of library in the present situation is changing fast. The Library personnel should be aware of latest technologies and its application to continue and maintain the importance of the service being offered. Utilization of modern information technology in the present libraries is optimistic to gain right information in the right place and at the right time. Information technology helps to progress the rank of the Library with Library professionals.

2.9.9 ICT Infrastructure of College Libraries in North East Region:

Table 2.1

State	College Name	Computer	Sep. Server	UPS	Scanner	Barcode Scan	Thermal Printer	Xerox	Laminating	College website	Internet Facility	RFID	Operating System	Library Software
														ICT INFRASTRUCTURE IN THE NORTH EAST REAGION
Arunachal Pradesh	Govt.College,Bomdila	1	0	1	0	0	0	0	0	0	0	0	win7	0
	Don Bosco College	1	0	1	0	0	0	1	0	1	1	0	win7	0
	I.G.G.College	2	1	2	1	0	0	1	0	0	0	0	win10	0
	Jawaharlal Nehru Coll.	18	1	24	3	4	0	2	0	1	1	0	win7	SOUL2.0
	NERIST	20	1	12	1	4	1	1	0	1	1	0	win7	SOFTLINK
Assam	B.Baruah College	9	1	9	1	2	1	1	0	1	1	0	win2000	SOUL2.0
	Bapujee College	8	1	0	1	1	1	1	0	1	1	0	win2000	SOUL2.0
	Gurucharan College	23	1	1	1	2	1	1	0	1	1	0	0	SOUL2.0
	Radhamadhab College	15	1	15	1	1	0	2	0	1	1	0	win7	SOUL2.0
	Women's College	3	0	3	1	0	0	1	0	1	1	0	0	SOUL2.0
Manipur	DM College of Arts	9	1	7	0	0	0	2	0	1	1	0	winxp	SOUL2.0
	DM College of Science	7	1	3	0	1	0	2	0	1	1	0	winxp	SOUL2.0
	Kakching Khundu Colleg	3	1	3	0	0	0	0	0	1	1	0	winxp	SOUL2.0
	Manipur College	3	1	1	0	0	0	1	0	1	1	0	win7	SOUL2.0
	S.Kula Women's College	10	1	1	0	0	0	1	0	1	1	0	win7	SOUL2.0
Meghalaya	Synod College	3	1	3	1	1	0	0	0	1	1	0	win10	SOUL2.0
	St.Anthony's College	50	1	4	1	0	0	3	0	1	1	0	linux	KOHA
	St.Edmun's College	12	0	6	1	1	0	1	0	1	1	0	0	KOHA
	St.Mary's College	35	1	35	0	0	0	1	0	1	1	0	linux	KOHA
	Union Christian College	2	0	2	1	1	0	1	0	1	1	0	0	SOUL2.0
Mizoram	Govt.H.bana College	7	1	1	2	1	1	1	0	1	1	0	win7	SOUL2.0
	Govt.Aizawl College	6	1	5	2	2	0	2	1	1	1	1	win7	SOUL2.0
	Govt.Mamit College	6	1	0	1	1	1	1	1	1	1	0	win7	SOUL2.0
	Govt.Saitual College	5	1	4	1	2	1	1	1	1	1	0	win7	SOUL2.0
	Govt.Serchhip College	8	1	8	1	1	0	2	1	1	1	0	win7	SOUL2.0
Nagaland	Kohima Science College	5	0	5	1	1	0	1	0	1	1	0	0	SOUL2.0
	Dimapur Govt. College	17	1	1	1	2	0	1	0	1	1	0	win7	SOUL2.0
	Sazolie College	4	0	4	1	1	0	0	1	1	1	0	0	SOUL2.0
	School of Agri & R.D	26	1	5	1	3	0	3	1	1	1	0	win7	SOUL2.0
	St.Joseph College	6	1	6	1	1	0	1	1	0	1	0	Winxp	SOUL2.0
Sikkim	Namchi Govt. College	2	0	2	0	1	1	0	0	0	0	0	0	SOUL2.0
	Govt.College,Burtuk	2	0	2	1	0	0	1	0	0	1	0	0	SOUL2.0
	Inst of Higher Ningma	1	0	1	0	0	0	0	0	0	0	0	0	0
	Narbahadur Bandari Col	2	1	2	0	0	0	1	0	0	1	0	win7	KOHA
	Sikkim Govt Col. Tadong	2	1	2	1	0	0	1	0	0	0	0	win7	KOHA
Tripura	Dasaratha Deb Memor	10	0	10	1	1	0	2	0	1	1	0	0	KOHA
	Dharmanagar GovtlCol	2	0	2	0	0	0	1	0	1	1	0	win7	KOHA
	Govt.Deg.Col. Dharmana	6	0	6	1	0	0	1	0	1	1	0	0	KOHA
	Govt.Deg.Col,Kamalpur	11	0	11	0	1	0	1	0	1	1	0	0	DIGILIB
	Maharaja Bir Bikram	3	0	3	1	0	0	1	0	1	1	0	0	A-GRANTH.
	Total	365	25	213	31	36	8	45	7	32	35	1		

ICT infrastructure in College of North East Region is imbalance. It is mainly because of the authority of the Colleges. In some College, higher authority provides good number of ICT equipment in the library whereas in some other Colleges, they do not provide minimum requirement of computer for library automation. Three Colleges Library have only one each Computer sets and 7 College Libraries have 2 computer sets in the library which is not sufficient for working properly for the staff and no computer sets is provided for the students. Barcode scanner which is essential for circulation works is not available in four Colleges. Circulation and protection of books is equal importance in the Library. Out of 40 College Library, there is only 1 RFID technology is in using in Govt. Hrangbana College, Aizawl.

The above table 2.1 clearly tell us that there is no proper rationalization of ICT infrastructure in College Library in North East Region. It is clear to say that, the work flow of College Library is low level for maximum benefit for students and the staff/.

It was also possible to find from the above table that out of 40 Colleges, 32 Colleges have College Website and 35 Colleges have Internet facility. All the College in the selected 40 Colleges, have neither separate Library website nor Institutional Repository and proper Library Network. Had there been such facilities, it will be global accessible from everywhere.

2.10 House Keeping Operation :

Library Automation mainly focuses to change services of Library from traditional manual service to the application of Information Communication Technology (ICT). In the traditional Library where the record, transaction and other Library works done in manual process required many duplicate works, time consuming and more change to commit error. But in the automating library, many problems face by library staff as well as the library users can be solved easily. It saved the time of both sides and also accurate the service by less error and easy to provide the right information.

The House Keeping Operations based on SOUL 2.0 are highlighted as follows:

a) **Acquisition**:

Acquisition is the basic works in every library. The Acquisition work comprises selection of books, ordering process, receiving books from supplier and accessioning of books.

Normally in an academic library, selection of books is done by concern faculties. After obtaining the consent of the head of Institution, the selected list is submitted to the librarian. The Librarian or in-charge librarian will do duplicate checking whether the book is already available in the library. Then, ordering is done to publisher or supplier.

When the book reached the acquisition section check whether the bill is correct and tally with the order list. After that, the process of accession like stamping and recording into assigned unique accession number is held. All these works are carried by the acquisition section. Acquisition module of SOUL 2.0 software enables library staff to handle all the major functions.

b) **Catalogue**: Cataloguing is the most important module in the Library Management Software from the point of view of retrieval of information. Retrieval of accurate and correct information depends upon how much care was taken while deeding accurate bibliographical data. These works are used to be done in the technical section. The classifier assigned the book number and classification number which are called, 'call number'. Catalogue module is used for retrospective conversion of library resources. It facilitates library staff to process the newly acquired library resources.

c) **Circulation**: This is normally called Transaction. This module takes care of all possible functions of circulation. Most of the libraries can issue or lend book to the valid members for the period allowed to the member. Sufficient care has been taken in designing this module starting from membership management, maintenance and status of library items, transaction, Inter Library Loan, overdue charges, renewals and reminder.The Circulation module is fully compatible with

the NISO Circulation and interchange Protocol (NCIP) version 2.0 as well as SIP2 FOR ELECTRONIC surveillance and RFID based transaction of the items.

d)   **Maintenance**: In every library, book and other document can be damage, lost and outdated. In such case, it is an important job for the library staff to maintain, repair and replace. Some books may be outdated and obsolete which are no longer useful for the library user. Books may also be shelved by the library staff and user, it is so necessary to put in the right place.

In the automated library required information entered to generate and display appropriate messages to the users.

e)   **Serial Control**: managing serials control is one of the fundamental job and complicated task in all libraries. Serial are primary source of new ideas and current knowledge. Every library whether automated or traditional shall be awarded about the serials. It is essential to keeps proper record throughout the year. There is periodical record register prepared by library stationary supplier.

In an automated library, the software contained separate serial control modules. All important jobs related to the serial management are included as per requirement in ready format. The ALA Glossary of Library and Information Science defines the serial as "a publication issued in successive parts, usually at regular intervals, and as a rule

intended to be continued indefinitely. Serials include periodicals, annuals (reports, yearbooks etc) and memoirs, proceedings, and transaction of society."

Knowledge is increasing and publication of serials also growing whereas the cost of subscription is rising year by year. All the libraries are facing financial shortage and hence, proper management of serial is mandatory in the Library.

Ref :www.inflibnet.ac.inwww.ijodls.in

2.11 Library Services:

As per the fifth law of Library Science, "Library is growing organism", propounded by SR Ranganathan, and as knowledge and information is growing very fast, library also growing its resources, the service provided by the library increasing endlessly. Demand and enquiry of document in the last decade and the present demand is quite different.

Apart from the Library Housekeeping Operations likeAcquisition, Cataloguing, Circulation, Maintenance and Serial Control, there are number of services as and when required situation in the interval times. It may be different from one library to one another. Such types of service are very important for library to become smarter looking to reach internal quality progress.

Guidelines on quality indicators in library and information services, affiliated and constituent college gives importance in this matters, and said, "In affiliated colleges, the core objectives of the library is to support academic programmes offered and the library may evolve its collection and services mainly to reflect the curriculum requirement of its users. Besides the library many design a system to deliver its product and services to attract more users. Ultimately the library should aim at bringing its entire target to the library and ensure its optimum usage.

[http://:www.naac.gov.in-access on 4.6.2019]

Services provided by an automated Library may be the following:

a) **Library Orientation Programme**: At the beginning of the year, It is good to organise Library orientation programme among the first year students informing and giving knowledge about how to use resources of the library and other rules and regulation of library.

b) **Stock taking or stock verification**: Library should always perform stock taking and stock verification. It is important to know how many books have become lost in the past year.

c) **Book Shelving**: Book arrangements in the book shelve be done properly according to subject and class number sequence.

d) **Stock rectification:** Books can be placed sometimes in a wrong place, it is always required to rectify.

e) **Books binding**: Sometimes old books require binding if it damaged. Binding of back volume journal also need to be done when the volume becomes complete.

f) **User Card:** In an automated library, user card can be generated from software. Preparing and printing of user card is one of an important service in the library.

g) **Question in digital format**: To provide the users, old university questions should be scanned, saved in PDF format and uploaded in the Institutional Repository or College website.

h) **Book Bank:** Book bank is another important service of library. It is for the specified member. NAAC peer team always insist to set it up in the library.

i) **Reading Room:** Proper, clean, airy and enough space reading room should be provided for the user. It is good to provide separate reading rooms for teachers and research scholars.

j) **Internet facility:** Providing Internet facility for students is important now for accessing global information.

k) **Friendly to the user:** Library is a place where 'Please' and 'thank you' shall be used. Library staff shall have such environment.

l) **N-LIST:**E-journal and E-book consortia developed by INFLIBNET can be now accessible for college who are under Sec 2(f) and 12B of UGC Act 1956.Providing accessibility is now an important service of library.

n) **Security measures:** Providing security gate keeper and visitor book, CCTV and RFID-anti theft is very good service in the library for security purpose.

o) **Current Awareness Service:** User need to know current event in the library, arrival of new books should be displayed in the notice board or displaying the jacket of the book.

p) **OPAC:** OPAC is one of the important services that a Library will provide. There is one module in the Automation software from which the books can be searched by the user. It is one of the useful tools for the user.

q) **Bibliographic database:** Preparing Bibliographic database is another important service which the library has to perform. List of books holding in the library was printed and display in the appropriate place.

r) **Newspaper clipping**: Another important library service is clipping newspaper. Important articles and writing in the daily newspaper is cut and clip in subject-wise for consultation as required.

2.12 Conclusion

Now-a-day, Library Automation is highly important to fulfil the need of the users. In a College Library, students and teachers are busy in their personal interest, they have very less time to visit Library. Many students have no time to sit and consult the library. Those students who can visit, they want to have required information in a short time. Thus, library should have good preparation by applying device and equipments for Automation. To provide correct, direct and right information quickly, Library Automation is much necessary.

Human beings have always commits mistake and error, Library automation using proper Library Management Software and other apparatus devices and the equipments; it will help for providing fast and accurate right service to the Library user.

The traditional print library and traditional library services will not disappear. But, as librarians, we must accept and adapt to the introduction of new techniques. Use of ICT in the Library has taken the prominent place in the education and research. Libraries are also given due importance to substantiate the teaching – learning and research activities of the institutions.

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http://www.librarysoftware.in/adv-library-automation.html

CHAPTER 3

Status of Library Automation in North East Region using SOUL 2.0

3. Status of Library Automation in North East Region using SOUL 2.0:

3.1 Introduction:

Library Automation, Networking, Digitization and Website Development are fast changing towards improvement and quality of Library and Information services. With these automation and networking activities, users get an easy access to large quantity of Library resources which consist of books, journals, research project, dissertation and thesis and many online e-resources. Therefore, it is imperative that libraries need to be automated fast so as to follow other operations and developmental activities. As told earlier, North East Region comprises eight states, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The Library automation activities are changing very fast. Library professionals, Library authorities and Library users have realise its importance keeping in view the national and global scenario.

3.2   Library Management Software:

Several Library Management Software are available at International and national level, which are designed to manage different library routine work. Whereas users of the Library management software have different taste, popularity of the software also varied. Most of the software are integrated and have modules for the different activities or task carried out in the Library such as acquisition, cataloguing, circulation, serial control, administration and reports.

The Library management software is broadly divided into two by differencing in terms of money involved. They are: Commercial software and Open source software.

3.3 Commercial Software: Commercial Software are generally designed and developed by reputed organization and firms. Many efforts and devotion by experts in the field of Computer science and Library science are involved and hence it is more reliable for different woks carried out in the library. As the software is commercial, it requires paying the cost of the software. Many small libraries cannot afford to use due to financial constraints.

3.4 Open Source Software: Open source software for library management software is developed and designed towards public interest. It is available in the internet, downloadable freely by anyone. The source code and copyright can be obtained from the net, and it is freely allowed to be modified as per the users' convenience.

By clubbing together, some examples of the Library Management Software is mentioned in the proceeding table.

Table 3.1:

Library Management Software			
AGORA	***GREENSTONE***	MAITRYEE	**SOUL**
ALICE for windows	HINARY	MEMLIB	TINLIB
CDS/ISIS	ILM	MIDAS	**TOTAL IT SOLUTION**
DIGILIB	***KOHA***	NIRMAL	ULSIS

DOCUWARE	KULMARK	OARE	VIRTUA
EASYLIB	LABRARY PLUS	PALMS	VLTS
EDLS	LIBERTY 3	PHP My Library	WEBLIS
E-GRANTHALAYA	LIBINFO	PROTA/TEEAL	WINISIS
EGRARY	**LIBSYS**	SLIM	WYLISYS
GLAS	LMS	SOFTLINK	X-LIB

Source: https://:www.academia.edu.in,   http://shodhganga.inflibnet.ac.in.

There must be other library management software available presently, of all these 40 numbers listed software, CDS/ISIS, GREENSTONE, and KOHA are open source software popular in the Indian context and of these, KOHA is mostly used by the Libraries as one private firm InKOHA, Kolkata can provide service regarding customization as well as data migration works. Among the commercial software, LIBSYS, SOUL and TOTAL IT SOLUTION are commonly used in academic libraries of India. Of them, SOUL developed by INFLIBNET, (an autonomous body of inter University Centre of UGC) is mostly used by the College libraries in India.

3.5   GENESIS OF SOUL 2.0:

Software for University Libraries (SOUL) is state-of-the-art integrated library management software designed and developed by the INFLIBNET Centre based on necessary activity of College and University Libraries. It is a user-friendly software designed to work under   client-server   environment.   SOUL   2.0   is   compliant   to

international standards for bibliographic formats, networking and circulation protocols. On looking at the name of the SOUL, it looks suitable only of University library only, but it is nicely flexible enough to be used for automating all types of academic libraries.

The first version SOUL 1.0 was released during CALIBER 2000. The database of the SOUL 1.0 was designed on MS-SQL and was compatible with MS-SQL Server 7.0 or higher. The latest version SOUL 2.0 was designed for latest versions of MS-SQL and MySQL. SOUL 2.0 is compliant to international standards such as MARC 21 bibliographical format.

Fig. 3.1 : SOUL Manual
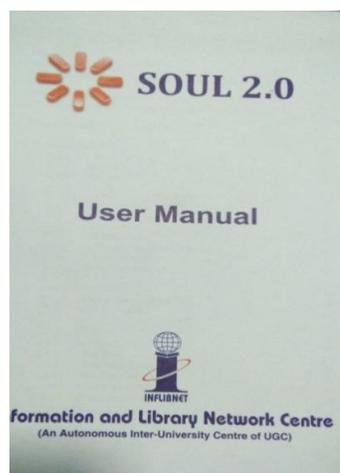
3.5.1 Modules: The SOUL 2.0 consists of the following modules. East module has further been divided into sub-modules to cater to its functional requirements. Main modules of SOUL 2.0 are the following:

- ❖ Acquisition
- ❖ Catalogue
- ❖ Circulation

❖ OPAC

❖ Serial Control

❖ Administration

The in-built network feature of the software will allow multiple libraries of the same network library to function together as well as access to the distributed databases installed at Central Libraries and union catalogue mounted at the pilot project INFLIBNET Centre.

3.5.2   Acquisition: The acquisition module enables library staff to handle all the major functions such as:

➢ Suggestions Management.

➢ Order Processing, Cancellation and reminders.

➢ Receipt, Payment and Budgetary control.

➢ Master files such as currency, Vendors, publishers etc.

➢ Reports.

3.5.3   Catalogue: Catalogue module is used for retrospective conversion of Library resources. It also facilitates library staff to process the newly acquired library resources. The strong features of catalogue module are:

❖ Allows cataloguer to create their own templates for data entry of different library resources;

❖ Different templates for leader and fixed fields of MARC21;

❖ Allows user-generated customized reports;

❖ Facilitates authority database of person name, corporate body, subject headings and series name;

❖ Supports copy cataloguing in MARC21 format by using ISO-2709 standard;

❖ Master database of publishers;

3.5.4   Circulation: The Circulation modules takes care of all possible functions of circulation. Sufficient care has been taken in designing this module starting from membership management, maintenance and status of library items, transaction, Inter-library loan, overdue charges, renewals and reminders, search status and report generation according to the status of the items. The circulation module is fully compliant with the NISO Circulation and Interchange Protocol (NCIP) Version 2.0 as well as SIP2 for electronic surveillance and RFID based transaction of the items.

Major functions of the circulation modules are:

❖ Membership

❖ Transaction

❖ Overdue Charges

❖ Reminder

❖ Search status

❖ Maintenance of the items such as binding, lost, replace, missing, withdrawal, etc

❖ Report generation based on the various requirements.

3.5.5 **On-line Public Access Catalogue (OPAC):** One of the major attractions of SOUL is its robust On-line Public Access Catalogue (OPAC). The OPAC has simple and advanced search facility with the minimum information for each item including author, title, corporate body, conference name, subject headings, keywords, class number, series name, accession number or combination of any of two or more information regarding the item. Major functions provided in the OPAC module are:

❖ Simple Search;

❖ Boolean Search;

❖ Advanced Boolean Search;

❖ Displaying and downloading of records in MS Exel,pdf or MARCSML

❖ Search support for the items that are in the acquisition process in the library.

3.5.6 **Serials Control:** Managing serials is the most complicated job for a library. The serials control module keeps tracks of Serials in the Library effectively and efficiently. The serial control module is developed based on the KARDEX system and the following functions built into Serial Control.

Modules on Serial Control are as follows:

❖ Suggestions;

❖ Master databases;

❖ Subscriptions;

❖ Check-in of individual issues of journals;

❖ Payment, reminder, binding, and title history;

❖ Export/ Import by using ISO 2707 bibliographic format;

❖ Article indexing of journal/book articles;

❖ Cataloguing of electronic journals;

❖ Keep track of the history changes of the journals.

3.5.7 Administration: The Administration module of the SOUL 2.0 as per input from the various SOUL users and requirements of the Library Staff is upgraded from SOUL 1.0 version. The modules have been divided into three major sub-modules for accommodating the new features. These three sub-modules are user management, System Parameters and Masters. The Administration Module provides the following:

❖ Grouping of users based on the policy;

❖ Transactional rights over the systems;

❖ Transaction level security to users;

❖ Various configuration settings such as labels, e-mail and other parameters related to the software use; and

❖ Common master databases being used in modules.

Fig – 3.2:   Use of SOUL 2.0: An Indian Scenario
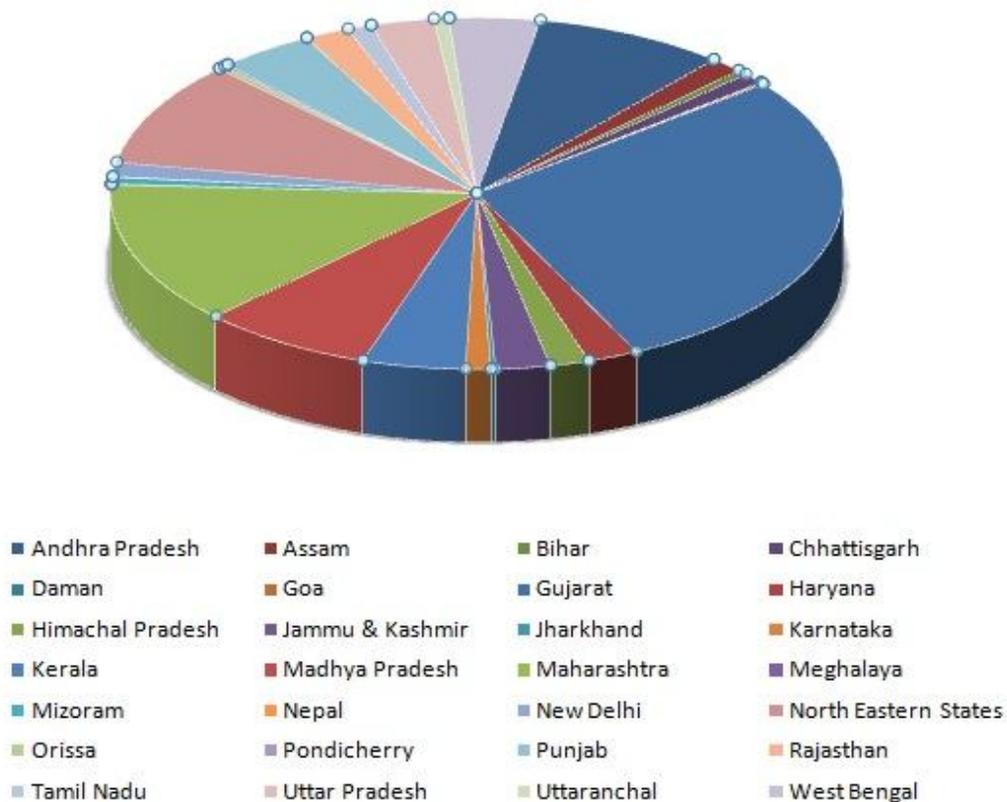
- Andhra Pradesh
- Assam
- Bihar
- Chhattisgarh
- Daman
- Goa
- Gujarat
- Haryana
- Himachal Pradesh
- Jammu & Kashmir
- Jharkhand
- Karnataka
- Kerala
- Madhya Pradesh
- Maharashtra
- Meghalaya
- Mizoram
- Nepal
- New Delhi
- North Eastern States
- Orissa
- Pondicherry
- Punjab
- Rajasthan
- Tamil Nadu
- Uttar Pradesh
- Uttaranchal
- West Bengal

The Library Automation scenario using SOUL 2.0 in the North East Region with special reference to College is steadily progressing. INFLIBNET Centre, Gandhinagar, Gujarat is the pilot agency for the development of Information and knowledge in the field of Library services.

North Eastern Region comprising eight states is divided into two parts, four states in one group. INFLIBNET appointed two SOUL Coordinators such as, North East I covering Assam, Meghalaya, Sikkim and Tripura. In the coverage area of North East I comprising 4 states, number of Colleges under Section 2(f) and 12B of UGC Acts, 1956, there are 350 colleges available, 230 Colleges are using SOUL 2.0 and the user percentage becomes 44.25.

Meanwhile, in the North East II covering Arunachal Pradesh, Manipur, Mizoram and Nagaland number of College available is 124 and number of SOUL users is 69 and the users percentage becomes 64.5. In order to highlight an overview of Colleges in the North East Region, below mentioned table presents the total number of Colleges and their SOUL installation in the state-wise North East Region:

Table3.2:

NOS. OF COLLEGES IN NORTH EAST REGION UNDER SECTION 2(f) AND 12B OF UGC ACT 1956				
SLNO	STATE	Nos. of College	Nos of SOUL Installation	Qr.Circled and resp.recved
1	Arunachal Pradesh	9	7	5
2	Assam	284	205	5
3	Manipur	56	25	5

4	Meghalaya	35	13	5
5	Mizoram	24	24	5
6	Nagaland	31	8	5
7	Sikkim	11	2	5
8	Tripura	20	10	5
	Total	470	294	40

Source :   https://:www.ugc.ac.in.; http://:www.inflibnet.ac.in -   access on 10.4.2019

Since the present study is limited to a random sampling method, we therefore pick up five Colleges of each state coming under North East Region. The study covers and circulated questionnaire to 40 Colleges and response received from all the Colleges, and hence, the response rate reached to 100 per cent. The following tables depict their total holdings in their Library. As per record received from INFLIBNET, all these Libraries covered in the present study are using SOUL 2.0.

Table 3.3:

LIBRARY COLLECTION								
State	College N ame	Books		Journal/Periodical			Digital Collection	
		Text Book	Reference	Intrn- ationl	Natio- nal	Magazine	e-book	e- journal.
Arunachal Pradesh	Govt.College,Bomdila	12996	997	7	24	7	0	0
	Don Bosco College	6780	1100	0	3	5	0	0
	I.G.G.College	13981	4500	0	21	9	0	I2
	Jawaharlal Nehru Coll.	39604	3596	44	12	14	80000	3824
	NERIST	16400	4031	0	40	14	1153	3
Assam	B.Baruah College	26000	3200	2	11	15	31	6000
	Bapujee College	7031	7573	0	14	8	N-LIST	N-LIST
	Gurucharan College	35211	4000	3	36	17	N-LIST	N-LIST
	Radhamadhab College	4800	13200	0	22	8	30	N-LIST
	Women's College	27854	2516	2	10	6	0	0
Manipur	DM College of Arts	41942	772	0	0	0		42714
	DM College of Science	47878	18257	0	22	0		66157
	KakchingKhundu College	11560	1000	0	5	5		12570
	Manipur College	19107	1023	0	0	0		20130
	S.Kula Women's College	11570	862	1	35	5	50	N-LIST
Meghalaya	Synod College	31997	1018	0	0	0	0	0
	St.Anthony's College	40000	0	2	8	10	0	2
	St.Edmund's College	28250	1500	3	35	28	0	0
	St.Mary's College	22394	1635	3	28	2	N-LIST	N-LIST
	Union Christian College	22354	930	2	18	4	NLIST	N-LIST
Mizoram	Govt.Hrangbana College	29894	7850	3	10	7	N-LIST	N-LIST
	Govt.Aizawl College	30501	2930	1	4	6	N-LIST	N-LIST
	Govt.Mamit College	6050	470	1	4	0	N-LIST	N-LIST
	Govt.Saitual College	10387	2000	2	5	4	N-LIST	N-LIST
	Govt.Serchhip College	14110	764	5	11	4	N-LIST	N-LIST
Nagaland	Kohima Science College	17750	1355	4	28	9	N-LIST	N-LIST
	Dimapur Govt. College	6890	631	2	15	5	N-LIST	N-LIST
	Sazolie College	6300	1200	3	8	10	0	0
	School of Agri& R.D	30000	4500	0	69	11	N-LIST	N-LIST
	St.Joseph College	9600	2600	0	4	7	N-LIST	N-LIST
Sikkim	Namchi Govt. College	13415	218	1	1	4	0	0
	Govt.College,Burtuk	21315	2218	4	10	12	N-LIST	N-LIST

	Inst of Higher Ningma	21450	1150	1	5	4	0	0
	NarbahadurBandari College	32185	2800	2	4	5	0	0
	Sikkim Govt Col. Tadong	18400	315	1	2	5	0	0
Tripura	Dasaratha Deb Memorial	28600	1450	2	4	8	210	15
	DharmanagarGovt Col	12450	520	1	2	5	0	0
	Govt. Deg.Col. Dharmanagar	34084	3740	1	3	5	0	0
	Govt.Deg.Col,Kamalpur	12590	6155	0	28	5	0	0
	Maharaja BirBikram	43305	2692	0	5	0	5000	300
	TOTAL	**856277**	**117268**	**103**	**556**	**273**		

The above table No. 3 reveals that total holding of books from 40 Colleges library reach only 856277; and total collection of reference books is 117268. This table also displayed that Journals subscribed by the selected sample College libraries reach to International Journal – 103, National Journals – 556 and popular magazines reached 273 only. Journals and periodicals are primary source of information from which teaching faculties will get original as well as latest information. It can be observed and said that College authorities may be made more aware about the importance of subscription of Journals in the College Library.

Among the 40 sampled Libraries, only 16 have subscribed the facility of e-journals and e-books from INFLIBNET Centre. Awareness among College authority as well as government authority towards maximum utilization of electronic digital resources available at INFLIBNET is highly recommendable. Meanwhile, librarians should make convincing pressures to the College authority.

The following table 4 provides information on the utilization of Library Management Software for automating their Library by the selected 40 Colleges in North East Region (5 College each of north-eastern states)

Table 3.4:

LIBRARY MANAGEMENT SOFTWARE USED					
State	**College Name**	**Software using**	**State**	**College Name**	**Software using**
Arunachal Pradesh	Don Bosco College	0	Mizoram	Govt.Aizawl College	SOUL 2.0
	Govt.College,Bomdila	0		Govt.Hrangbana College	SOUL 2.0
	I.G.G.College	0		Govt.Mamit College	SOUL 2.0
	Jawaharlal Nehru Coll.	SOUL 2.0		Govt.Saitual College	SOUL 2.0
	NERIST	SOFTLINK		Govt.Serchhip College	SOUL 2.0
Assam	B.Baruah College	SOUL 2.O	Nagaland	Dimapur Govt. College	SOUL 2.0
	Bapujee College	SOUL 2.O		Kohima Science College	SOUL 2.0
	Gurucharan College	SOUL 2.O		Sazolie College	SOUL 2.0
	Radhamadhab College	SOUL 2.O		School of Agri& R.D	SOUL 2.0
	Women's College	SOUL 2.O		St.Joseph College	SOUL 2.0
Manipur	DM College of Arts	SOUL 2.O	Sikkim	Govt.College,Burtuk	0
	DM College of Science	SOUL 2.O		Inst of Higher Ningma	SOUL 2.0
	KakchingKhundu College	SOUL 2.O		Namchi Govt. College	SOUL 2.0
	Manipur College	SOUL 2.O		NarbahadurBandari Col	KOHA
	S.Kula Women's College	SOUL 2.O		Sikkim Govt Col. Tadong	KOHA
Meghalaya	St.Anthony's College	KOHA	Tripura	Dasaratha Deb Memorial	KOHA
	St.Edmun's College	SOUL 2.0		DharmanagarGovtlCol	KOHA
	St.Mary's College	KOHA		Govt. Deg.Col. Dharmanagar	KOHA

	Synod College	KOHA		Govt.Deg.Col,Kamalpur	DIGILIB
	Union Christian College	SOUL 2.0		Maharaja BirBikram	E-GRNT.

As stated early, among the randomly selected 40 Colleges, 25 colleges are using SOUL 2.0 software for their library automation, 11 College Library are using other software and 4 of them did not start automation works. It is known from the INFLIBNET that UGC North Eastern Regional Office, Guwahati paid the cost of software which is deposited to INFLIBNET account for the cost of SOUL, but due to unawareness of the College authority, it is not installed in some of colleges. On the other side, the activity of INFLIBNET Centre towards problems solutions cannot progress fast due to other activities. Hence, Colleges opt for alternative software and the users of other library automation software are steadily increasing.

3.6   SOUL 2.0 Training Programme in Mizoram:

It is all known that development of the country in general and Library automation in particular in the North Eastern region is way behind other states like Andra Pradesh, Gujarat, Himachal Pradesh, and Maharastra. The first Library automation by using SOUL 1.0 in Mizoram was in 2006 at Hrangbana College and it was upgraded to SOUL 2.0 in 2010. At that time, even NEHU Library did not use any Library management software for their library operation.

Towards Library Automation for College Library and other academic library, the Library Committee of Govt. Hrangbana College had accomplished several jobs. They had organized two times INFLIBNET Regional Training Program for Library Automation and one time UGC Workshop on Library Automation. During those training, Librarians from other Colleges came with their Computers and installed the software at the training place. Presently, there are 24 Colleges in Mizoram and all the Colleges have computerized library. There is a total of 38 installation of SOUL 2.0 in the state which includes other special libraries in Mizoram.

The following programs have been organized for the development of Library automation in Mizoram:

1. INFLIBNET Regional Training Programme on the Library Automation (IRTPLA) was successfully organized during 6-10 Dec 2010.

2. INFLIBNET REGIONAL TRAINING PROGRAMME ON LIBRARY AUTOMATION (IRTPLA) – was successfully organised during 30th April to 4th May 2012.

5. UGC SPONSORED WORKSHOP ON SOUL 2.0 (Practical Hand on Training and Trouble shooting) successfully organized during 12th – 17th October 2015.

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CHAPTER 4

Library Automation Skills in College Libraries

using SOUL in North East Region

4.1 Introduction: The historical background of Library automation is very old. While investigating study in the events on history of Library automation, a scholar shall be required to look back around half a century. Before the computer period, idealist invented a device for assisting book lending system. In 1930, Herman Hoolrith invented punched card equipment and used in United State census. Soon after that, Information technology based applications were adopted in the Library procedures. A great explosion in library automation and networking was notice in 1970s when integrated computer chip and storage device were developed. During 1980s, there was rapid development of lower cost microcomputers, the automation become a possible for every kind and of the library where big or small.

In the Indian scenario, the adoption of information and communication technology in the libraries took place very late. Indian National Scientific and Documentation Centre (INSDOC) did the first effort in Library Automation in 1965. They prepared author and subject index at Indian Science Abstract.

Library automation started in India three decades ago. It was stand-alone application in the initial stage which was hosted on main frame computer offered by 3rd generation programming language like COBOL based file system. But the application of the 3rd generation

computer created problems on file management and it is hard to access due to low speed and high cost. The developments of computer technology reduce at affordable price.

Relational database management system (RDBMS) for data management have resulted into the development of Library management system (LMS) more appropriate to integrated library system which is based on client – server architecture and made accessible to users through local area network (LAN). The advent of web 2.0 offers library services over internet through browser and social media.

In short, library automation refers to the use of computers in the Library to serve the need of library staffs and library users. The computers help to provide fast and reliable access to the resources available in the library as well as elsewhere. The application of computers in the library operations avoids repetitive jobs and saves lot of labour, time of the users as well as Library staff. The saved time can be rendered for other assignment which resulted less requirement of staff and reduce co-effective expenditure.

4.2   INFLIBNET Initiatives of Library Automation in India

Information and Library Network (INFLIBNET) Centre, Gandhinagar is an Autonomous Inter-University Centre (IUC) of University Grants Commission (UGC) of India. It is a major National Programme initiated by the UGC in March 1991 with its Head Quarters at Gujarat University Campus, Ahmedabad.

The main objective of INFLIBNET is to establish: a computer communication network for linking libraries and information centre in universities, deemed to be universities, colleges, UGC information centre, institutions of national importance and R & D institutions, etc. avoiding duplication of efforts. The top goal to achieve is complete automation of libraries in Higher Educational Institutions throughout the country. Based on the above objectives and goals, library management software SOUL 1.0 was developed and released at CALIBER 2000, now the latest SOUL 2.0 is using.

4.3   SOUL : Library Management Software:

The present study focus to the topic on, "Library automation skills of College Librarians using SOUL 2.0 in North East India", the scholar gives major features of SOUL 2.0 library management software in little detail.

Software for University Libraries (SOUL) is a state-of-the-art integrated library management software designed and developed by the INFLIBNET Centre based on requirements of college and university libraries. It is user-friendly software developed to work under client-server environment. The software is compliant to international standards for bibliographic formats, networking and circulation protocols. After a comprehensive study, discussions and deliberations with the senior library professionals of the country, the software was designed to automate all housekeeping operations in a library. The software is suitable not only for the academic libraries, but also for all types and sizes of libraries, even school libraries.

The first version of software i.e. SOUL 1.0 was released during CALIBER 2000. The database of the SOUL 1.0 was designed on MS-SQL and was compatible with MS SQL Server 7.0 or higher. The latest version of the software i.e. SOUL 2.0 has been designed for latest versions of MSSQL and MySQL (or any other popular RDBMS). SOUL 2.0 is compliant to international standards such as MARC21 bibliographic format, Unicode-based Universal Character Sets for multilingual bibliographic records and NCIP 2.0/ SIP2 based protocols for electronic surveillance and control.

4.3.1 Major Features and Functions

Features and functionalities of SOUL 2.0 are as follows:

a) UNICODE-based multilingual support for Indian and foreign languages;

b) Compliant to International Standards such as MARC21, AACR-2, RCXML;

c) Compliant to NCIP 2.0 and SIP2 protocol for RFID and other related applications especially for electronic surveillance and self check-out&check-in;

d) Client-server based architecture, user-friendly interface that does not require extensive training;

e) Supports multi-platform for bibliographic database such as My SQL, MS-SQL or any other RDBMS;

f) Supports cataloguing of electronic resources such as e-journals, e-books, virtually any type of material;

g) Supports requirements of digital library and facilitate link to full-textarticles and other digital objects;

h) Supports online copy cataloguing from MARC21 bibliographic database;

i) Provides default templates for data entry of different type of documents. User can also customize their own data entry templates for different type of documents;

j) Provides freedom to users for generating reports of their choice and

format along with template and query parameters;

k) Supports ground-level practical requirements of the libraries such as stock verification, book bank, vigorous maintenance functions, transaction level enhanced security, etc.;

l) Provides facility to send reports through e-mail, allows users to save the reports in various formats such as PDF, Excel, MARCXML, etc.;

m) Highly versatile and user-friendly OPAC with simple and advanced search. OPAC users can export their search results into PDF, MS-Excel, and MARCXML format;

n) Supports authority files of personal name and corporate body ;

o) Supports data exchange through ISO-2709 standard;

p) Update form Software as well as offline update;

q) Global Search and replace

r) Provides simple budgeting system and single window operation for allmajor circulation functions;

s) Strong region-wise support for maintenance through regional coordinators. Strong online and offline support by e-mail, chat and through dedicated telephone line during office hours; and

t) Available at an affordable cost with strong institutional support.

4.4   SOUL: Modules

SOUL 2.0 library management software has different modules according to their entity and nature. It has 6 main modules and various

sub-modules as per area of operation. The SOUL 2.0 consists of the following modules. Each module has further been divided into sub-modules to cater to its functional requirements:

1) Acquisition

2) Catalogue

3) Circulation

4) OPAC

5) Serial Control

6) Administration

The in-built network feature of the software will allow multiple libraries of the same university to function together as well as access to thedistributed databases installed at university libraries and union catalogue mounted at INFLIBNET using VSAT network. While implementing the SOUL 2.0 in the college libraries, the librarian and library staff develop their skills in the following areas.

1) Acquisition

The first and important work which the Librarian has to do is Acquisition or procurement of books. Procedure for purchase of books is varied to one library to another. The module enables library staff to handle the entire major functions, such as:

- Suggestions Management;

- Order Processing, Cancellation and Reminders;

- Receipt, Payment and Budgetary control;

- Master files such as Currency, Vendors, Publishers etc.; and Reports.

2) **Catalogue**

Catalogue module facilitates library staff to process of the newly acquired library resources. It also used for retrospective conversion of library resources. During the period of traditional library service, cataloging service was done manual and hand written. Modern library management software likes SOUL allowed printing of Catalogue cards in AACR2 format. The strong features of catalogue module are follows:

- Allows cataloguer to create their own templates for data entry of different library resources;

- Different templates for leaders and fixed fields of MARC21;

- Allows user-generated customized reports;

- Facilitates authority database of person name, corporate body,Subject headings and series name;

- Supports copy cataloguing in MARC21 format by using ISO-2709 standard;

- Master database of publishers;

3) Circulation

This module takes care of all possible functions of circulation. Sufficient care has been taken in designing this module starting from membership management, maintenance and status of library items, transaction, ILL, overdue charges, renewals & reminders, search status and report generation according to the status of the items. The circulation module is fully compliant with the NISO Circulation and Interchange Protocol (NCIP) version 2.0 as well as SIP2 for electronic surveillance and RFID based transaction of the items. Major functions of the circulation modules are:

- Membership;

- Transaction;

- Inter-library loan;

- Overdue charges;

- Reminder;

- Search status;

- Maintenance of the items such as binding, lost, replace, missing, withdrawal, etc.; and

- Report generation based on the various requirements.

-

4) On-line Public Access Catalogue (OPAC)

One of the major attractions of SOUL is its robust On-line Public Access Catalogue (OPAC). The OPAC has simple and

advanced search facility with the minimum information for each item including author, title, corporate body, conference name, subject headings, keywords, class number, series name, accession number or combination of any of two or more information regarding the item. Major functions provided in the OPAC module are:

- Simple Search;

- Boolean Search;

- Advanced Boolean Search;

- Displaying and downloading of records in MS Excel, PDF or MARCXML; and

- Search support for the items that are in the acquition process in the library.

5) **Serial Control:**

Managing serials is the most complicated job for a library. The module keeps track of serials in the library effectively and efficiently. The serial control module is developed based on the KARDEX system and the following functions built into it:

- Suggestions;

- Master databases;

- Subscriptions;

- Check-in of individual issues of journals;

- Payment, reminder, binding, and title history;

- Export / import by using ISO 2709 bibliographic exchange format;

- Article indexing of journal/book articles;

- Cataloguing of electronic journals; and

- Keeps track of the history changes of the journals.

6) **Administration:**

In addition to the features available in the Administration Module of the SOUL 1.0, some more features have been added to the administration module of the SOUL 2.0 as per inputs from the various SOUL users and requirements of the library staff. The module has been divided into three major sub modules for accommodating the new features. These three sub-modules are User Management, System Parameters and Masters. The Administration Module provides the following:

- Grouping of users based on the policy;

- Transactional rights over the systems;

- Transaction level security to users;

- Various configuration settings such as labels, e-mail and otherparameters related to the software use; and

- Common master databases being used in modules.

7) Installation Procedure:

Installation of SOUL 2.0 is complicated and has many steps. It is mandatory to have proper knowledge of Computer and its software applications with inter-relations. At the same time, having knowledge about Library Science at least Master degree level is required to take care of the application of modern technology among the library professionals.

Hardware requirement:

Processor Type : PIV or Higher

Processor Speed : 1 GHz or Higher

RAM : Minimum 512 MB (1 GB Recommended)

Free Hard Disk Space : 400 MB (Minimum)

Supported Operating System Platforms

Windows XP SP3 , Windows Vista , Windows 2003 Server, Windows2008 Server (Latest Service Packs are always recommended)

Other Pre Requisites:

Windows Installer Version 3.1

Dot Net framework Version 2.0

Microsoft Data Access Components Version 2.8 (SP1)

Microsoft Report Viewer 2005

Latest hardware and software are supported if the output device available in the Library is compatible with the latest versions.To install all pre-requisites together, please execute setup.exe from "PreReq" folder in SOUL 2.0 CD

Installation:

Installation of SOUL 2.0 has been divided into following three parts:

1. Database Installation

2. Application Installation

3. Utility Installation

4.5   Conclusion:

INFLIBNET Centre usually provides training to the library professional from various part of the country at INFLIBNET Centre. In order to carry faster development, SOUL Coordinators and Technical Assistant were appointed by INFLIBNET Centre since 2008. They divided India into different region and 8 states of North-East become one region which was covered by one SOUL Coordinator till the year 2015. From the year 2016, North Eastern Region was bifurcated into two regions: NE-1 comprises Arunachal Pradesh, Assam, Meghalaya, and Sikkim whereas NE-2 comprises Manipur, Mizoram, Nagaland and Tripura.

As a Librarian, the scholar organized two times for INFLIBNET Regional Training Programs for Library Automation (IRTPLA) during 6-10 Dec. 2010 and 30 April to 4 May 2012 and also UGC Sponsored

Workshop on SOUL 2.0 during 12 – 17 October, 2015 towards development of College Library Automation in Mizoram. Participants from different college came with their computers and on the spot installation have done successfully. At present, there are 24 secular Colleges who are under section 2(f) and 12B of UGC act, 1956 in Mizoram. All the college now using SOUL 2.0 that is 100% users.

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CHAPTER 5

DATA ANALAYSIS AND FINDINGS

5.   Data Analysis and Findings:

5.1   Introduction:

The present chapter deals with the analysis of the collected date received through questionnaires. Data from each question is analyzed and related to those in other relevant questions to draw the useful conclusion. Structured questionnaire was distributed to 5 each Colleges of North Eastern Region of 8 states which means 40 College Librarian. The topic of the present study focused to Library Automation Skills of College Librarian using SOUL 2.0 in North East Region of India, the scholar used spot and telephonic interview as well as whatsapps chatting for collection of data.

5.2   Data Analysis:

Data collected and response received through questionnaire are scientifically analyzed and interpreted using quantitative data analysis software namely MS excel spreadsheet in order to derive appropriate findings and conclusion. Given below tables is the detailed analysis of response received.

Table 5.1: No of colleges and Soul users under section 2(f) and 12B of UGC act 1956

Sl.No	State	No of College	SOUL users	Percentage
1	Arunachal Pradesh	9	7	77.8

2	Assam	284	205	72.2
3	Manipur	56	25	44.6
4	Meghalaya	35	13	37.1
5	Mizoram	24	24	100
6	Nagaland	31	8	25.8
7	Sikkim	11	2	18.2
8	Tripura	20	10	50
	Total	470	294	62.5

Fig. 5.1

No. of college and SOUL users under section 2(f) and 12B of UGC act 1956 in North East Region (displaying percentage)
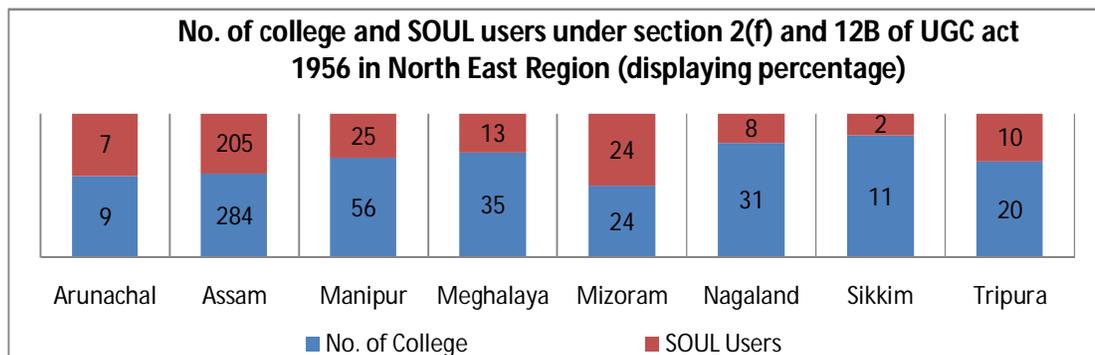
The above Table 5.1 displays that, as per UGC website https://www.ugc.ac.in there is 470 colleges who are listed under section 2(f) and 12B of UGC Act, 1956. Out of 470 Colleges, 294 colleges have done Library automation which become 62.5 %. Among the eight state of North east region, Mizoram is the highest that is 100% of reaching all the Colleges have done Library automation using SOUL 2.0 whereas Sikkim in the lowest of which 18.2% have Computerized College Library.

Table 5.2:   Library Automation skills of College Librarians in

North East Region   Selected 40 Colleges.

Installation done by:-			
No OF COLLEGE	SELF	OTHER/ OUTSIDE	NON COMPUTERISED
40	2	34	4

Fig 5.2
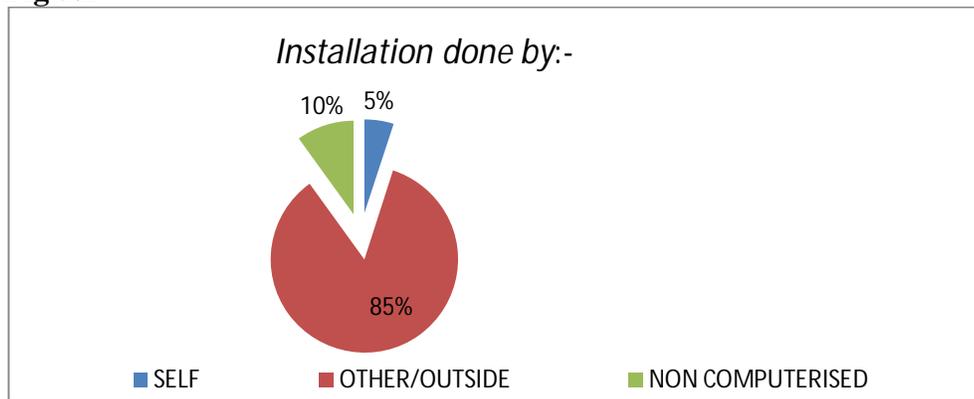
The above table 5.2 displayed Librarians' skills on installation of SOUL 2.0 software. It can be seen from the table that only 2 out of 40 selected librarians have done SOUL 2.0 software installation of their own that is 5%. In the mean time, majority of College Librarians 34 out of 40 received support from other or technical assistant. In case Mizoram, the Coordinator of SOUL (NE-II) had organized INFLIBNET Regional Training Program on Library Automation (IRTPLA) tow times and UGC workshop on Library Automation using SOUL 2.0 one time in Mizoram. At the time of training, Librarians are

informed to bring their server computer and installation was done by SOUL Technical Assistant on the spot of the training.

5.3   Installation of SOUL 2.0 software:

Installation of SOUL 2.0 has many steps, it require thorough knowledge of Computer. INFLIBNET Centre used to organize training and operation of SOUL 2.0 installation at the Centre. Below table displayed about training on Installation of SOUL software among the College Librarians in North Eastern Region.

Table 5.3   Gone for Installation Training:

No. of College	Trained	Untrained	Non Computerized
40	16	20	4

Fig 5.3
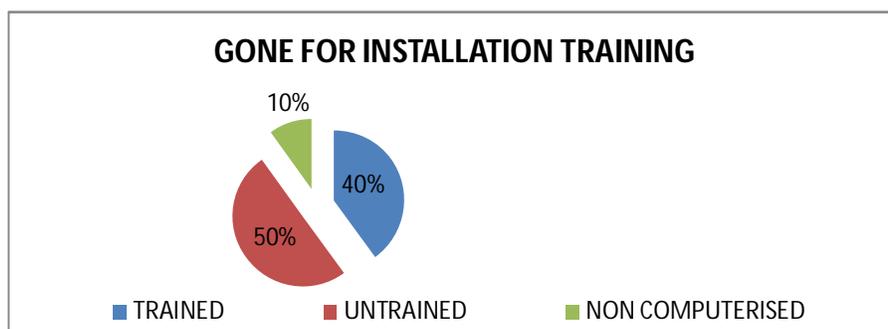
If we look at the table 5.3 it can be clearly seen that out of 40 sample College Librarian in the North East Region, only 16 have trained on installation that is 40%. Half of the Librarians do not have trained for

installation of the software that is 50%. Among the selected College, 4 colleges yet to computerize their libraries that is 10%.

5.4   Level of Computer Expertise of Librarians:

In the age of information communication technology, computers are being used for day – to – day Library works which save the time of users and the Library Professional, at the same time avoid duplication of works and make library service smooth and effective. Due to the changes taken place in ICT uses in the Library, demand expert level knowledge of Computer become very high. Below table 5.4 with its diagram display the available computer expert in the College Library.

Table 5.4   Level of Computer Expertise of Librarians:

No. of College	MCA Degree	BCA Degree	Certificate/ Diploma	Others
40	1	7	18	14

Fig. 5.4
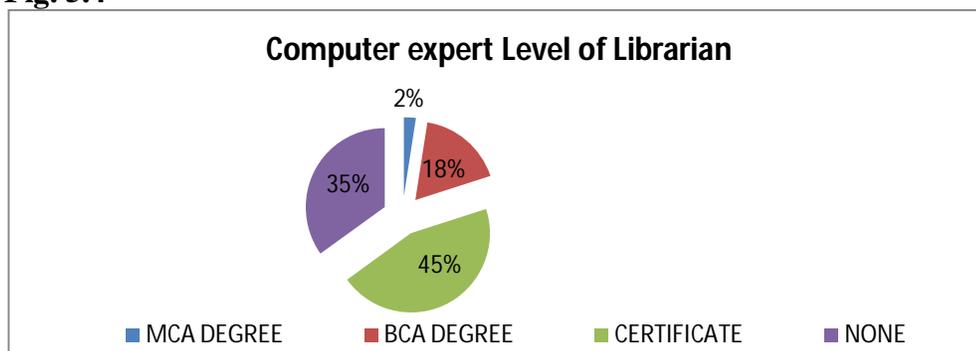
It can be seen from the above table that out of 40 Colleges, only one Librarian is having MCA degree i.e. 2%, BCA degree holders available in

the Library are 7 which is 18% out of 40 library. Among the library staff, there are 18 persons out of 40 who have Certificate course in Computer science that is 45%.

5.5   Computer expert available among College Library staff:

Since there is no proper staff pattern in the College Library, the staff strength is different to one another. Due to the application of ICT in modern libraries, at least one Computer expert in College Library be available. If the librarian is qualified as per norms, supporting staff shall be able to maintain the system in the Library.

Table 5.5   Computer expert available among supporting staff.

No. of College	Expert available	Non available
40	8	32

Fig 5.5

Computer expert available among suporting staff

20%

80%

■ EXPERT AVAILABLE   ■ NON AVAILABLE
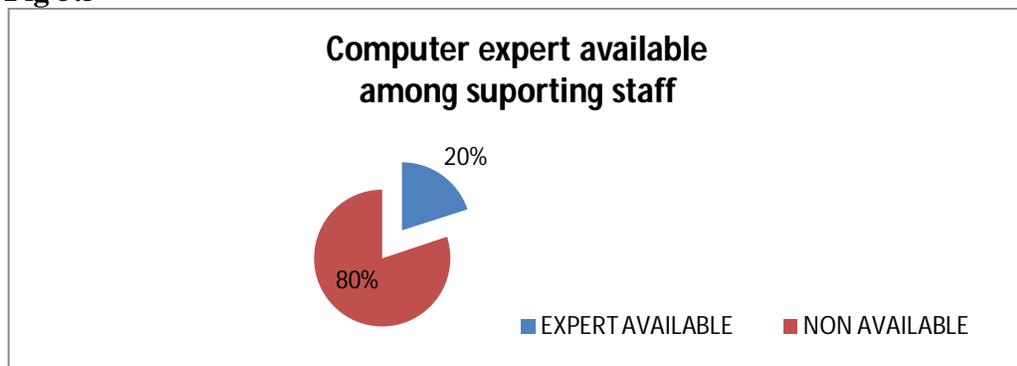
In the above table 5.5, it can be seen that out of 40 College Libraries in North East Region, only 8 Library have Computer expert staff i.e. 20%. Meanwhile, 32 College out of 40, there is no computer expert among the

Library Staff that is 80%. If there is no Computer expert in the Library, maintenance of system and proper function cannot be expected.

5.6   Skills in Acquisition module:

In every Library, acquisition is the main task of the staff, suggestions received from the authority as well as from the users. Normally, academic library like College, suggestion is received from the teaching faculty with approval of the Head of Institution. After checking duplicate copy of library holding, order to be placed to the supplier and accessioning record and payment of bill will follows:-

Table 5.6   Skills in Acquisition Module:

	Advanced Level	Medium Level	Low Level
Suggestion	8	20	12
Orders	9	17	14
Accessioning	11	19	10
Payment	8	18	14

Fig. 5.6
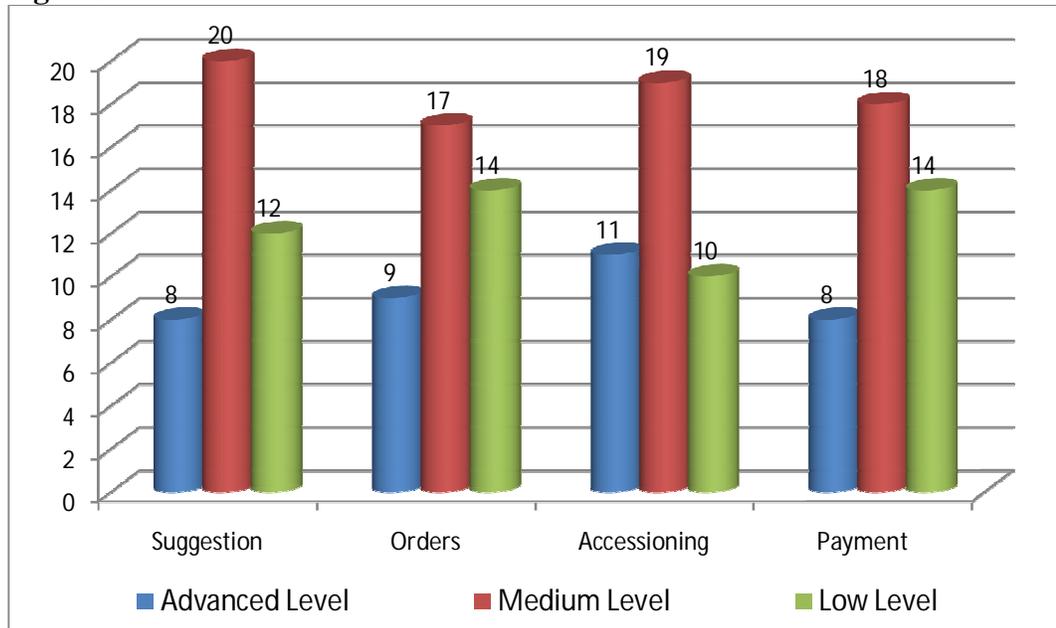
The table 5.6 displays the skills Librarian in different college of North East Region. As stated earlier, suggestion and payments are always done by the higher authority in the College. The advanced level of skill falls between 8-11. It can be seen from the table and graph that the skills of these four criteria suggestion, orders, accessioning and payment are highest in number from 17-20 out of 40 librarians. The low level of working skill on acquisition module of SOUL 2.0 lies in 10-14. This will clearly showed us that Librarians can work properly on SOUL 2.0 software.

5.7   Skills in Cataloguing Module:

In College Library, cataloguing is the technical task of the staff. Module of Cataloguing works comprises Cataloguing, Classification, Export and Import to and from other software or other database. In academic library like College where library automation software is using, the cataloguing works

is much more easy and helpful. If we give command, the Software can generate the catalogue card.

Table 5.7   Skills in Cataloguing Module:

Particulars	Advanced Level	Medium Level	Low Level
Cataloguing	20	19	1
Export/Import	6	19	15
Users Service	9	26	5
Report	8	19	13

Fig. 5.7 Skills of Cataloguing Module:
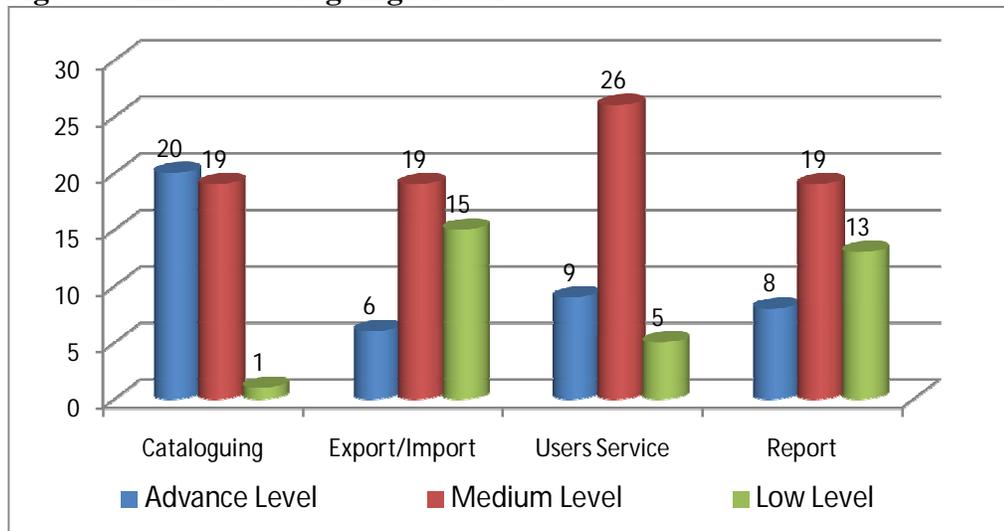
The table 5.7 displays the skills of Librarians in different college of North East Region on Catalogue module. The advanced level of skill on cataloguing, export/import, user service and report falls between 6 to 20. It can be seen from the table and graph that the skills of these four criteria cataloguing, export/import, user service and report lies from 1 to 26. Medium level skill among Librarians reach 19 to 26 which means Librarians can manage the

software properly but not high level expert. The low level of working skill on acquisition module of SOUL 2.0 lies in 1-15. This will clearly showed us that Librarians are mostly depend on the ready catalogue card generated by SOUL 2.0 software.

5.8   Skills in Circulation Modules:

Table5.8   Skills in Circulation Modules:

In an Academic Library, circulation is the main daily works of the staff. Circulation Module comprises Membership, transaction, Inter Library loan, and maintenance. College where library automation software is using, the circulation is done with barcode scanner. Most of the time, the circulation works of issue and return is doing by the Library Assistant. Membership database was entered from the Admission form and library users card can be generated from the software. Inter Library Loan facility in not permitted in the College Library because all of them works within their institution.

Table 5.8: Skills in Circulation Module:

Particulars	Advance Level	Medium Level	Low Level
Membership	22	12	6
Transaction	18	15	7
Inter Library Loan	2	8	30
Maintenance	5	20	15

Fig. 5.8 Skills in Circulation modules
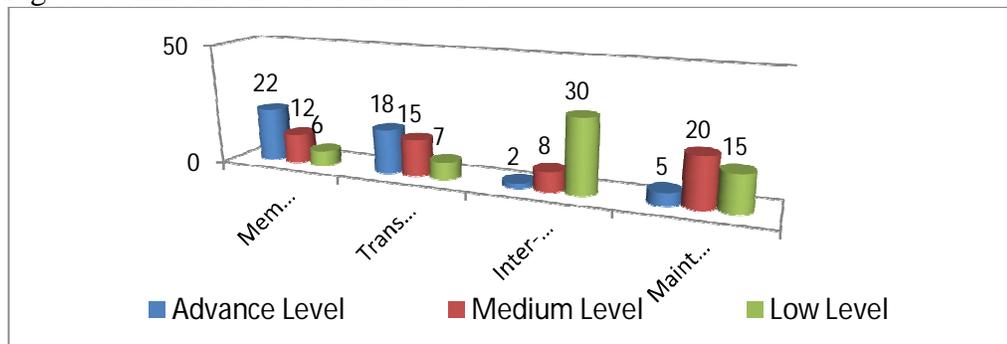
Table 5.8 displays the skills of Librarians in different college of North East Region on Circulation module. The level of skill on Circulation module such as membership, transaction, Inter library loan and maintenance falls from 1 to 30 at was high range. Advance level of skills among Librarians lies from 2 to 22 which means Librarians can manage the software properly but not high level expert. The medium level of working skill on circulation module of SOUL 2.0 lies in 8-15, and the low level lies from 6 to 15. This will show us that Librarians works at Circulation counter in the absence of Library Assistants.

5.9   Skills in Serial Control Module:

In every Library, Serial Control is one of the main periodical works of the staff. Serial Control Module comprises title, suggestion, subscription, payment, check in and binding. Serials/Journals are now called as "Continuing Resource". SOUL has full-fledged module to tackle variety of issues associated with these type of resource. The process of selections of

titles, approval process, placing order etc. remains more or less the same with

as the Book.

Table 5.9   Skills in Serial Control Module:

Particulars	Advanced Level	Medium Level	Low Level
Titles	5	17	18
Suggestions	2	10	28
Subscription	2	18	20
Payment	1	14	25
Check in	2	12	26
Binding	2	10	28

Fig. 5.9 Skills in Serial Control Module
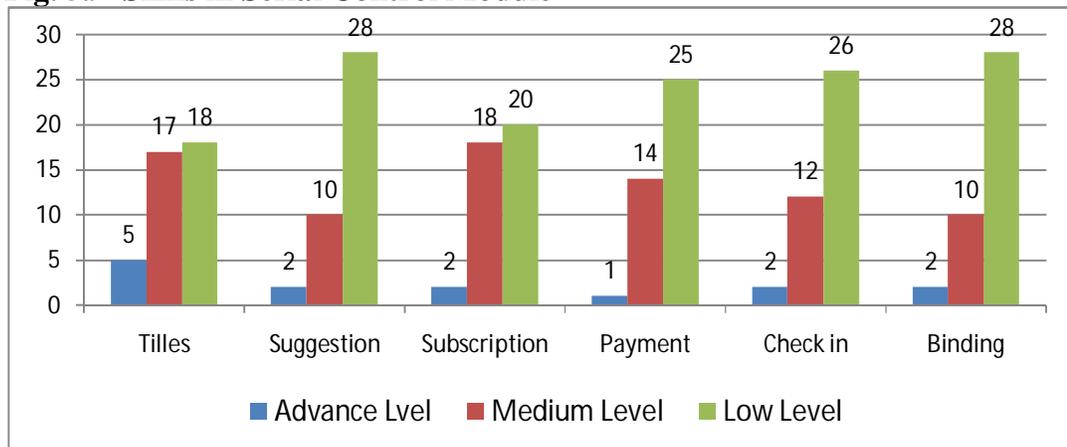
Table 5.9 displays the skills of Librarians in different college of North

East Region on Serial control module. The advance level of skill on Serial

Control module falls from   1 to 5 which means only few librarians are expert

in serial control. The medium level of working skill on serial control lies in 10

to 17 that mean less than half of librarians can work on Serial control module.

The low level skills are from 18 to 28, which denote Librarians in North East Region are low expert in Serial Control module.

5.10   Skills in OPAC Module:

One of the major attractions of SOUL is its strong On-line Public Access Catalogue (OPAC). The OPAC has simple and advanced search facility with the minimum information for each item including author, title, corporate body, conference name, subject headings, keywords, class number, series name, accession number or combination of any of two or more information regarding the item.

Table 5.10   Skills in OPAC Module:

| Particulars	Advance Level	Medium Level	Low Level
Simple Search	18	17	5
Boolean Search	10	12	18
Advance Boolean Search	7	13	20
Member OPAC	9	23	8

Fig. 5.10 Skills in OPAC module
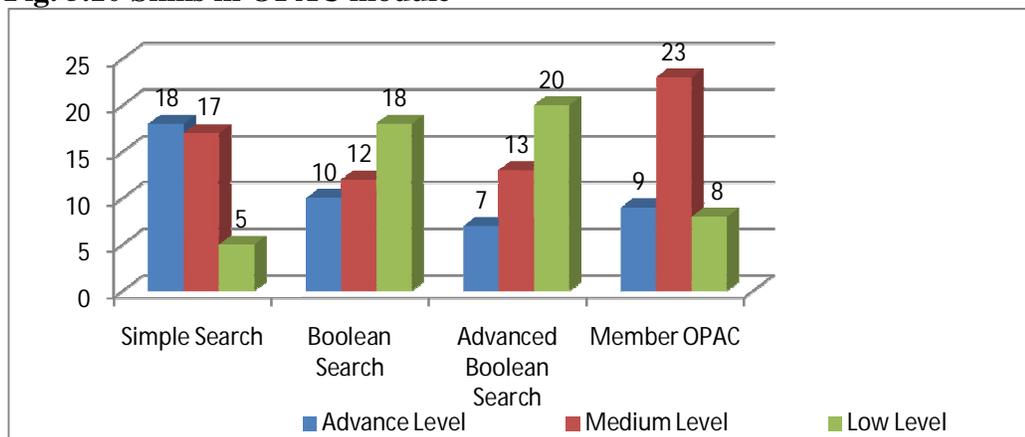
Table 5.10 displays the skills of Librarians in different college of North East Region on OPAC module. The advance level of skill on OPAC module falls from 7 to 18 which means more than half of librarians are expert in OPAC. The medium level of working skill on OPAC lies in 12 to 23 that mean about half of librarians can work on OPAC module. The low level skills are from 13 to 23, which denote Librarians in North East Region are low expert in OPAC module.

5.11 Skills of Administration Module:

SOUL or any Library Management Software will work efficiently only if parameters (rules) for each operation are set before we start using it Live. These parameters are stored in the Set-up pages and can be accessed by selecting "Administration". Once these Rules for various processes are fed in the LMS (Library Management Software), it will function smoothly without any obstacles. Therefore, we will first set-up the requisite parameters by using options available from Administration Module.

Table 5.11   Skills of Administration Module:

Particulars	Advance Level	Medium Level	Low Level
Users setting	9	21	10
System Setting	4	22	14
Acquisition Master	7	21	12
Cataloque Master	7	25	8
Circulation Master	12	17	11
Serial Master	7	16	17
General Master	8	19	13

Fig. 5.11
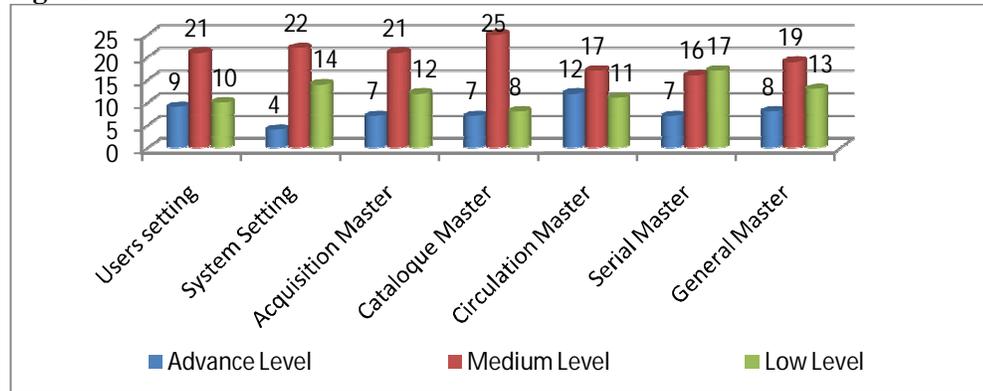
Table 5.11 mentioned that the skills of Librarians in different college of North East Region on Administration module. The advance level of skill on Administration module falls from 4 to 9 which mean less than half of librarians are expert in Administration module. The medium level of working skill on Administration module lies within 17 to 25 that mean about half of librarians can smoothly work on Administration module. The low level skills are from 8 to 17, which denote less than half of Librarians in North East Region are low expert in Administration module. Entry of parameters and pre-define are normally done by the expert from INFLIBNET Centre.

5.12 Testing of Hypothesis:

Hypothesis is usually considered as one of the research techniques used for research with the functions to suggest tentative assumptions and testing the hypothesis through data analysis and findings. It may not be absolutely true and may vary after research result. Based on the study, the following hypothesis is tested as follows:

H-1 **Library Automation skills enable professional competency development of library professionals to provide effective and efficient service.**

Answer: Table No 5.8 – skills in circulation displayed that by using SOUL 2.0, Librarians in North East Region are expert and advance level of skill in membership and transaction sub-module. It is clear that Library automation skills enable professional competency development of library professional to provide effective and efficient service.

Hence, the Hypothesis 1 is sustained.

H-2 **Lack of training in SOUL 2.0 creates obstacles in library management functions and to cater users effectively**.

Answer: Table 5.2 depict that while doing installation of SOUL 2.0, creating master data entry and when there is trouble on operation of the software, most of the College Librarians are depend on outside support i.e. INFLIBNET Centre or Technical Assistants. Out of 40 College librarians, 2 of them installed on their own and 34 received outside support. From this result, Librarian in the North East Region are not much expert in SOUL 2.0 library management software as installation, trouble repair and providing proper record will hampers the quality service of the library.

Hence, Hypothesis 2 is found correct.

H-3 **Lack of ICT infrastructure and authority support is the major problems of library automation in North East Region.**

Answer: Table 2.1 display that ICT infrastructure in College of North East Region is imbalance. It is mainly because of the authority of the Colleges. In some College, higher authority provides good number of ICT equipment in the library whereas in some other Colleges, they do not provide minimum requirement of computer for library automation. Three Colleges Library have only one each Computer sets and 7 College Libraries have 2 computer sets in the library which is not sufficient for working properly for the staff and no computer sets is provided for the students. Barcode scanner which is essential for circulation works is not available in four Colleges. Circulation and protection of books is equal importance in the Library. Out of 40 College Library, there is only 1 RFID technology is in using in Govt. Hrangbana College, Aizawl.

Hence, H-3 is tested and found correct.

H-4 **Library automation and Networking can lead to access global academic resources and promote teaching-learning in and a research.**

Answer: Table 2.1 clearly tells us that there is no proper rationalization of ICT infrastructure in College Library in North East Region. The work flow of College Library is low level for maximum benefit for students and the staff.

It was also possible to find from the table that out of 40 Colleges, 32 Colleges have College Website and 35 Colleges have Internet facility. If all the College in these selected 40 have proper Library Network and such facilities, it will be global accessible from everywhere.

Hence, the H-4 is tested and sustained.

5.13 Avenues for further Research:

Web technology is moving very fast as a result there are many versions likes web 2.0, web 3.0 and so on are approaching in a near future. Therefore Library software presently in 2.0 web technology is also taking new shape when the new versions are in operation. Therefore, many library software presently in 2.0 version are going to be change with many additional feature which has a great impact on the quality of Library and Information Services and the resource available in the Library are going to be more accessible by the user.

After pursuing my present research works, the following areas are emerges in which more research can be conducted.

1) Impact of Web 3.0, Web 4.0 Library Software in improving the quality of Library and Information Services.

2) Use of Social Media tools by the Libraries at the College and University.

3) Social Media feature and Quality of Library and Information Services.

4) Management efficiency of Library using SOUL 2.0 Software.

5) Library and Information Networking among the College Library using SOUL 2.0

6) Role of INFLIBNET in improving the quality of Library and Information Services using SOUL 2.0

CHAPTER 6

SUGGESTIONS AND CONCLUSION

6.1   **Introduction:**

The application of Information and Communication Technologies (ICTs) has a profound impact on library and information science. Advances in ICTs have allowed traditional LIS methods to be replaced by the newer, faster, and more accurate ways of transmitting information. Library automation, database development, networking of libraries, Internet and intranet applications in LIS, consortium-based benefits, and so on, have benefited librarians and library users for a number of years, making the work of libraries easier and more user-based.

Library automation implies a high degree of mechanization of various routine and repetitive tasks to be performed by Library Staff. With the help of computerization, the Library staff's job is reduced, accurate and speeds to a great extent. The appearance of computer has greatly increased the library automation. In addition to computer advancement, telecommunication and audio-visual technologies gave way to new possibilities in information handling In India; the use of computers is limited to only some specialized libraries unlike the case of developed countries. Library automation includes use of computers and other semi-automatic devices like punched cards to reprography. These are semi-automatic because human intervention is greater in extent. So, when we talk of library automation, these days, it is principally the use of computers; associated peripheral media; computer based products and services in library work.

Presently, librarians are playing an integrated role beyond their traditional job. In a fast changing world, there are new demands and influences on libraries and information centres. Using modern technologies, libraries all over the world are now shifting their emphasis from traditional to multidimensional work force. As a corollary to this, LIS professionals are supposed to play versatile role in different

areas of libraries and information centres to meet the expectations and needs of the present situation.

In a nutshell, it can be said that the Library and information professional communities are being affected by a range of ICT developments and so find their roles changing worldwide. A librarian with diverse talents and training, and who is flexible, will be able to meet the challenges of future library scene. The container of information is not only the print materials but this is the age we are living where a huge rate of information born in digital format. Technology alone cannot help bring about the required changes. Attitudes, practices, and policies need to change if libraries in India are to truly benefit themselves and their community of users by the application of new technologies; as the core objectives of LIS professionals are unchanged although the mode of services is changing to cope with paradigm shifts.

6.2   Suggestions:

Based on the present study and in order to improve Library automation skills of College Librarians using SOUL 2.0 in North East Region, and to improve the quality of College Library service, the following suggestions and recommendation are made for future development:

➢ College Librarians in North East Region have lack of ICT knowledge whereas application of different types of automation equipments is mandatory task for improvement of services in the Library. Hence, in order to improve skills of working, the authority should insisted proper training for the existing librarians.

- ➤ College Librarians in the North East Region should have attitude and zeal towards steps for improvement of quality to have Library Automation. New ideas, new technology imparting mind to be strengthen of their own will.

- ➤ Towards building of quality improvement and development into the same level, the authority of State Government should implies a fair competition among the Librarian as well as College library functioning.

- ➤ Most of the College Library does not have proper gate keeper and staff shortage also high in North East Region. Hence, installation of RFID and CCTv is highly important and recommendable.

- ➤ There should be regular budget allocation at the Directorate of Higher and Technical Education Department for the success of Library's growing.

- ➤ INFLIBNET Centre should make sanction for conducting state wise training for SOUL 2.0 at least once in a year and appoint one College librarian from all state of North East Region to work as SOUL Coordinator.

- ➤ INFLIBNET Centre should take initiative for creating and building Institutional Repository (IR) for all College in North East Region and librarian should act as coordinator.

- ➤ Provision of library network for SOUL 2.0 users may also be explored by INFLIBNET Centre.

- ➤ Respondents also opined that the SOUL 2.0 may be developed on Linux platform and having the facility for spell checker and multi lingual system having other regional languages.

- ➤ The present import-export is having some technical difficulties which need to be easy and compatible to other software.

➢ Moreover, SOUL 2.0 would be more user friendly and be compatible inbuilt with RFID technology.

➢ SOUL 2.0 should form part of curriculum and syllabus by all the LIS Schools in India.

6.3   Conclusion:

The fast changing development of Information Technology and its application in many field of knowledge changed the environment of working, living and growing. In modern Library, this new gadgets on IT is applied for the working of library staff and for providing of latest information to the users. Library users in a College Library are mainly teaching staff, students, and non-teaching staff. They are always busy of their own ways. Within a short period of time, they want to get required information from the Library.

On the other hand, new development of information communication devices which applied in the present day are not included in the syllabus during their studying period. I may certainly hard to catch up such development for the senior Librarians. Exactly, that is true statement as new technology which were applied in modern College library are out of the syllabus. The scholar of the present studies also such person, that there was no computer in the Department of Library and Information Science, NEHU.

Though, the Librarians may not have good knowledge of Information technology or computer skills, there should be intensive vision for the quality development to catch up the new equipment which will help Library routine

works of housekeeping operations. For new appointment of Librarian, Library Science and Computer Science is now equal importance. To become a College Librarian, UGC or State Government authority may in future, insist double degree on Library Science as well as Computer Science.

There are number of new concepts in a present day such as Web 2.0, Library 2.0, Learning 2.0, whatsapp, facebook, twitter etc. which are all social media are applicable in the College Library. These new concepts can be used for user's services for providing information likes overdue notice, reservation of borrowed books to them. In connection with the present study, the scholar visit INFLIBNET Centre during 4 – 11 August, 2019, it was known from the Scientist who are developing team of SOUL Software that the new version of SOUL 3.0 is under test period, and they have informed me that Chat platform based on mobile number will be inbuilt on SOUL 3.0 so that question and answer can be shared each other.

Based on the present study, it is obviously helpful and learned that Library Automation using SOUL 2.0 lifted up level of quality, working environment of Library, skills and competency development of existing College Librarians. Library Automation is much beneficial for the Staff for speedy works, accuracy and less error and for library users to save the time spent. College Librarians are expected to update and improve skills and competency in technological development. Not only automation using proper software, but also to apply other equipment such as CCTV, RFID to protect theft and stolen of books from the Library.

Towards library automation, College Librarians in the North East Region are expected to make them up to date as the technology development marching fast. They should agree to go for advance training in the areas of new knowledge. On the other hand, INFLIBNET the developer of SOUL software must be organized free training for the College Librarians. Sanction for organizing INFLIBET Regional Training Programme on Library Automation (IRTPA) in every states of the country every year. SOUL section in the highly required to strengthen and provide more fund for the College Library Automation at INFLIBNET Centre, Gandhinagar, Gujarat.

Appendix I:

LIST OF SOUL USERS IN NORTH EAST REGION AS ON DECEMBER, 2019

Sr No	Institute Name	City	State
1	Arunachal University of Studies, , Namsai (AR) New LE	Namsai	Arunachal
2	Central Institute of Himalayan Culture Studies, (Basubandhu Library), Dahung, Dist.: West Kameng (AR) New LE	West kameng	Arunachal Pradesh
3	Chintalapudi Engineering College, Chintalapudi (AP) New LE	Gunturdist	Arunachal
4	Don Bosco College, P.B. 191, Jully Itanagar (AR) (NERO)	Itanagar	Arunachal
5	Donyi-Polo Govt. College, Kamki Dist. West Siang (AR) (NERO)	West Siang	Arunachal
6	Government of Arunachal Pradesh	Itanagar	Arunachal
7	Govt. College, Bomdila. Dist.-West Kameng (AR) (NERO)	W.Kameng	Arunachal
8	Indira Gandhi Govt. College, Tezu, Dist.-Tirap (AR) (NERO)	Tirap	Arunachal
9	J.N. College, Pasighat. Dist.-East Siang (AR) (NERO)	East Siang	Arunachal
1	**Royal School of Business, Royal School of Engineering & Technology**	Guwahati	Assam
2	A. Swahindpedi Phakan College, Sibsagar, NERO New FE	Nawtidde	Assam
3	Araya Vidyapith College	Guwahati	Assam
4	Asian Institute of Management & Technology (AIMT)	Guwahati	Assam
5	Assam Agricultural University	Jorhat	Assam
6	Assam Engineering College	Guwahati	Assam
7	Assam Medical College, Dibrugarh, Assam NERO New FE	Dibrugarh	Assam
8	Assam Textile Institute, GNB Road, Ambari,Assam New (LE)	Guwahati	Assam
9	Assam University Library	Silchar	Assam
10	B B Kishan College	Bari	Assam
11	B B Kishan College Jalah PO- Jalaghat NEW LE	Baksa	Assam
12	B Borooah College	Guwahati	Assam
13	B K H college	Guwahati	Assam

14	B P Chaliha College	Kamrup	Assam
15	B P Chaliha College, Nagarbera,Assam (NERO)	Kamrup	Assam
16	B. Baruah College, Kamrup, Assam (AS) NERO New FE	Guwahati	Assam
17	B.H.B. College, Sarupeta, Assam (NERO)	Barpeta	Assam
18	Bajali Teachers Training College, P.O.: Patacharkuchi, New LE	Barpeta	Assam
19	Balaki College	Barpeta	Assam
20	Barbhag College	Nalbari	Assam
21	Barma College	Nalbari	Assam
22	Barpeta Girls College Barpeta, Assam (AS) NERO New FE	Barpeta	Assam
23	Barpeta Road Howly College, HOWLY (Barpeta), NERO New FE	Howly	Assam
24	Basugaon College, Po:Basugaon, Dist:Chirang (BTC), NERO New FE	Basugaon	Assam
25	Beltola College , P.O. Beltola, Guwahati (AS) New LE Inv-3332	Guwahati	Assam
26	Bengtol College, PO & Vill – Bengtol, BTAD New LE	Chirang.Btad	Assam
27	Bholanath College	Golakganj	Assam
28	Bholanath College (B N College), Dhubri, Assam (NERO)	Dhubri	Assam
29	Bholanath College, Dhubri (AS) UPG LE	Dhubri	Assam
30	Bihpuria College, North Lakhimpur, Assam (NERO)	Northlakhimpur	Assam
31	Bijni College, Bijni, Dist: Kokrajhar, Assam (AS) NERO New FE	Bijni	Assam
32	Bikali College, Goalpara, Assam (NERO)	Goalpara	Assam
33	Bir Lachit College, At rd, Sivasagar (AS) New LE	Sivasagar	Assam
34	Birjhora kanya Mahavidyalaya, Bongaigaon (AS) New LE	Bongaigaon	Assam
35	Biswanath College, Charali, Assam (AS) NERO New FE	Charali	Assam
36	Biswanatha college	Sonitpur	Assam
37	Bongaigaon B.Ed. College, Assam (AS) NEW LE	Bongaigaon	Assam
38	Borholla College, P.O. Borholla, Dist. Jorhat (AS) New LE	Jorhat	Assam
39	Central institute of technology	Kokrajhar	Assam
40	Chaiduar College, Sonitpur, Assam (NERO)	Sonitpur	Assam
41	Chhaygaon College, P.O.-ChhaygaonNew FE (NERO-2009-45)	Kamrup	Assam
42	Chila Roy College, Golakganj, Dist:Dhubri, Assam (AS) NERO New FE	Golakganj	Assam
43	Chilarai College	Golakganj	Assam
44	College of Education, Guwahati Christian Basti, New LE	Guwahati	Assam
45	Cotton College, Guwahati, Dist:Kamrup, Assam (AS) NERO New FE	Guwahati	Assam
46	Dakshin Kamrup College, Mirza, Dist:Kamrup, Assam (AS) New FE	Mirza	Assam
47	Dakshin Kamrup Girls College	Kamrup	Assam
48	Damdama College, Kulhati, Po. Kulhati, Kamrup (AS) New LE	Kamrup	Assam
49	Debraj Roy College	Golaghat	Assam
50	Demow College, P.O. Demow, Sivsagar, Assam, (AS) (NERO)	Sivasagar	Assam
51	Deomornoi Degree College, P.O. Deomornoi, New LE	Darrang	Assam
52	Department of Historical and Antiquarian Studies , NEW LE TO FE	Guwahati	Assam
53	Department of Mathematics	Dibrugarh	Assam
54	Dept of Library and Information Science	Guwahati	Assam
55	Dept. of Mathematics, Gauhati University, Guwahati (AS) New LE	Guwahati	Assam
56	Devraj Roy College, Golaghat, Assam (AS) NERO New FE	Golaghat	Assam
57	Dhemaji College	Dhemaji	Assam
58	Dhemaji Commerce College	Dhemaji	Assam

59	Dhemaji Girls College, PO:Dhemaji, Assam (AS) NERO New FE	Podhemaji	Assam
60	Dhing College, P.O Dhing, Dist: Nagaon- 782123 (AS) (NERO)	Nagaon	Assam
61	Dhubri P G T T College,Dhubri,Assam,New LE	Dhubri	Assam
62	Dibrugarh Polytechnic, Lahowal, Dibrugarh (AS) New FE	Dibrugarh	Assam
63	Dibrugarh University	Dibrugarh	Assam
64	Digboi College	Digboi	Assam
65	Digboi Mahila Mahavidyalaya, Digboi, Tinsukia- 786171 (AS) (NERO)	Tinsukia	Assam
66	Doomdooma College	Porupaisiding	Assam
67	Dr B K Baruah LIbrary	Guwahati	Assam
68	Dudhnoi College, Dudhnoi, Dist:Goalpara, Assam (AS) NERO New FE	Dudhnoi	Assam
69	Eastern Karbi Anglong College, P O. Sarihajan, New FE	Karbianglong	Assam
70	Elite Computers & Communications Pvt. Ltd.	Guwahati	Assam
71	Fakiragram College, PO:Fakiragram, Dist:Kokrajhar, NERO New FE	Fakiragram	Assam
72	Ganesh Lal Choudhury College, P O Barpeta Road, New LE	Barpeta	Assam
73	Gauhati University	Guwahati	Assam
74	Girjanand Chowdhury Institute of Management & Technology (GIMT)	Guwahati	Assam
75	Girls Polytechnic, Bamunimaidan, New (LE)	Guwahati	Assam
76	Goalpara College, (NERO)	Goalpara	Assam
77	Gogamukh College, Gogamukh, Dist:Dhemaji, Assam (AS) New FE	Gogamukh	Assam
78	Golaghat Commerce College, Jyotinagar, Golaghat, NERO New FE	Golaghat	Assam
79	Goreswar College, P.O.: Goreswar, Baksa-781366 (AS) (NERO)	Baksa	Assam
80	Gossaigaon College, P.O. Gossaigaon, Kokrajhar	Kokrajhar	Assam
81	Guwahati College, Bamunimaidam, Guwahati-21 (AS) (NERO)	Guwahati	Assam
82	Gyanpeeth Degree College, Nikashi, Baksa, BTAD, NERO New FE	Nikashi	Assam
83	H P B Girls College, P.O. & Dist: Golaghat-785621 (AS) (NERO)	Golaghat	Assam
84	H.R.H. The Prince of Wales Institute of Engineering and Technology, NEW FE	Jorhat	Assam
85	Habraghat Mahavidyalaya, P.O. Krishnai, Dist: Goalpara (AS) New LE	Goalpara	Assam
86	Haji Anfar Ali College	Nagaon	Assam
87	Handique Girls College, Guwahati (AS) UPG LE	Guwahati	Assam
88	Harhi College, PO:Gobindapur, Assam (AS) NERO New FE	Pogobindapur	Assam
89	Hojai College, P.O.: Hojai, Dist.: Nagaon (AS) (NERO)	Nagaon	Assam
90	ICON Commerce College, Guwahati, Assam, New, LE	Guwahati	Assam
91	Institute of Advanced Study in Science and Technology	Guwahati	Assam
92	Institute of Cooperative Management	Guwahati	Assam
93	Institute of Distance and Open Learning (IDOL)	Guwahati	Assam
94	Institute of Tai Studies and Research, Moranhat (AS) New LE	Moranhat	Assam
95	J B law college	Guwahati	Assam
96	Janata College, P.O.-Kabuganj, Dist.-Cachar (AS) (NERO)	Cachar	Assam
97	Janata College, Serfanguri, Dist.-Kokrajhar (NERO)	Kokrajhar	Assam
98	Jengraimukh College, PO:Jengraimuku (Mujuli), NERO New FE	Jengraimuku	Assam
99	Jhanji Hemnath Sarma College, Jhanji, Sivsagar (AS) NEW LE	Sivasagar	Assam
100	**Jorhat College (Amulgumated), Jorhat, Dist:Jorhat, Assam (AS) NERO New FE**	Jorhat	Assam
101	Jorhat Engineering College, Jorhat, Dist:Jorhat, Assam	Jorhat	Assam
102	Jorhat Medical College & Hospital	Jorhat	Assam
103	Joya Gogoi College, Khumtai, Golaghat-785619 (AS) (NERO)	Golaghat	Assam

104	K C Das Commeerce College, Chatribari, Guwahati-781 008 (NERO)	Guwahati	Assam
105	K.R.B. Girls College, P.O.-Bharalumukh, (NERO)	Guwahati	Assam
106	Kanya Mahavidyalaya, Geetanagar, Guwahati (AS) NEW LE	Guwahati	Assam
107	Khagarijan College, PO:Chota Haibar, Nagaon, Assam NERO New FE	Nagaon	Assam
108	Kharupetia College, PO:Kharupetia, Darrang, NERO New FE	Kharupetia	Assam
109	Kherajkhat College, Deotola, Lakhimpur (AS) NEW LE	Lakhimpur	Assam
110	Khoirabari College, PO:Khoirabari, Dist:Udalguri NERO New FE	Khoirabari	Assam
111	Khowang College, Khowang Ghat, Dist:Dibrugarh, NERO New FE	Khowangghat	Assam
112	Kokrajhar Commerce College, Kokrajhar, NERO New FE	Kokrajhar	Assam
113	Kokrajhar Govt College of Teachers Education, NERO New FE	Kokrajhar	Assam
114	Krishna Bora BEd College, L P Road, Lanka, Nagaon, New LE	Nagaon	Assam
115	Krishna Kanta Handique State Open University	Guwahati	Assam
116	KrishnaKanta Handiqui Library	Guwahati	Assam
117	**Kumar Bhaskar Varma Sanskrit & Ancient Studies Univ, New LE**	Nalbari	Assam
118	L C B College, Maligaon, Guwahati (AS) (NERO)	Guwahati	Assam
119	L. G. B. Girls College, Tezpur P.O. Ketekibari (AS) New LE	P.O.Ketekibari	Assam
120	Lakhimpur Commerce College, North Lakhimpur, (NERO)	Lakhimpur	Assam
121	Lakhimpur Kendriya Mahavidyalaya, Charaimoria, Lakhimpur	Lakhimpur	Assam
122	Lakhimpur Telahi Kamalabaria (LTK) College, NERO New FE	Lakhimpur	Assam
123	Lakhipur College, PO:Lakhipur, Dist:Goalpara, NERO New FE	Polakhipur	Assam
124	Lakshmibai National Institute of Physical EducationNew FE	Guwahati	Assam
125	Lala Rural College, PO:Lala, Dist:Cachar, Assam (AS) NERO New FE	Lala	Assam
126	Laluk College, PO:Laluk, Dist:Lakhhimpur, Assam (AS) NERO New FE	Laluk	Assam
127	Lanka Mahavidyalaya, NERO New FE	Ranmahallanka	Assam
128	M D K Girls College	Dibrugarh	Assam
129	Machkhowa Degree College, PO:Machkhowa, NERO New FE	Machkhowa	Assam
130	Madhya Kamrup College	Barpeta	Assam
131	Mahendra Narayan Choudhury (MNC) Balika Mahavidyalaya, Nalbari, Dist:Nalbari, Assam (AS) NERO New FE	Nalbari	Assam
132	Majuli College, Majuli, Dist:Jorhat, Assam (AS) NERO New FE	Majuli	Assam
133	Mangaldoi College, Mangaldoi, Dist:Darrang, NERO New FE	Mangaldoi	Assam
134	Manikpur Anchalik College, Manikpur Dist Bongaigaon (AS) New LE	Bongaigaon	Assam
135	Mankachar College, Mankachar, Dist:Dhubri, NERO New FE	Mankachar	Assam
136	Margherita College, Margherita, Dist-Tinsukia (AS) (NERO)	Tinsukia	Assam
137	Marghretia College	Margherita	Assam
138	Mariani College, P.O.: Mariani, Jorhat (AS) (NERO)	Jorhat	Assam
139	Marwari Hindi Pustakalaya	Guwahati	Assam
140	Mazbat College, PO.: Mazbat, Dist : Udalguri BTAD (AS) New LE	Udalguribtad	Assam
141	Medical College, Guwahati, Dist:Kamrup, Assam (AS) New FE	Guwahati	Assam
142	Moran College, P.O. Moranhat, Dist: Sivasagar (AS) (NERO)	Sivasagar	Assam
143	Moran Mahila Mahavidyalaya, PO- MORANHAT, NEW LE	Sivasagar	Assam
144	Murkong Selek College, PO:Jonai, Dist:Dhemaji, Assam (AS) New FE	Pojonai	Assam
145	Nabajyoti College, Kalgachia, Dist:Barpeta, NERO New FE	Kalgachia	Assam
146	Nagaon GNDG Commerce College, Panigaon, (NERO)	Nagaon	Assam
147	Nalbari College, Nalbari (AS) (NERO)	Nalbari	Assam

148	Nalbari Commerce College	Nalbari	Assam
149	Nandalal Borgohain City College	Dibrugarh	Assam
150	National Institute for Teacher Education, Khetri, New LE	Khetri	Assam
151	Nazira college	Sivasagar	Assam
152	Netes Institute of Technology & Science	Kamrup	Assam
153	Nirmal Haloi College, Patacharkuchi, Dist:Barpeta, NERO New FE	Patacharkuchi	Assam
154	Pub Kamrup College	Kamrup	Assam
155	Puthimari College, Soneswar, Kamrup	Kamrup	Assam
156	R G Baruah College, Guwahati (AS) UPG LE	Guwahati	Assam
157	R S Girls College	Karimganj	Assam
158	R.G. Baruah College, Ambari, Fatashil, Guwahati (AS) NERO New FE	Guwahati	Assam
159	Rangapara College, P.O. Rangapara, Sonitpur (AS) (NERO)	Sonitpur	Assam
160	Ratnapith College	Dhubri	Assam
161	S B Deorah College	Guwahati	Assam
162	Sapatgram College, P.O. Sapatgram, Dist- Dhubri (AS) (NERO)	Dhubri	Assam
163	Sarupathar College, Sarupthar (SA) (NERO)	Sarupthar	Assam
164	SCERT Directorate of SCERT, Kahilipara Guwahati AS NEW FE	Guwahati	Assam
165	SNGAP Syiem College, Mawkyrwat, West Khasi Hills (AS) (NERO)	West Khasihills	Assam
166	State Resource Centre	Guwahati	Assam
167	Suren Das College	Kamrup	Assam
168	Suren Das College, P.O. Hajo (AS) (NERO)	Hajo	Assam
169	THB College, Jamugurihat, Karchantola, Sonitpur (AS) (NERO)	Sonitpur	Assam
170	Tihu College, Tihu, Nalbari (AS) (NERO)	Nalbari	Assam
171	Udalguri College, P.O.: Udalguri, Dist: Udalguri (AS) (NERO)	Udalguri	Assam
172	Womens College	Tinsukia	Assam
173	Womens College, Shyamprasad Road P.O. Silchar	Silchar	Assam
1	Bethani Christian College, Churachandpur(New FE)	Churachandpur	Manipur
2	Biramangol College, Sawombung, Dist:Imphal, NERO New FE	Sawombung	Manipur
3	C I College, Bishnupur, Dist:Bishnupur, Manipur (MN) NERO New FE	Bishnupur	Manipur
4	Churachandpur College, Dist:Churachandpur, NERO New FE	Churachandpur	Manipur
5	D M College of Science	Imphal	Manipur
6	D.M College of Teacher Education, Imphal, (NERO)	Imphal	Manipur
7	D.M. College of Commerce, Imphal, Distt.- Imphal (MN) (NERO)	Imphal	Manipur
8	Damdel Christian College, Taloulong, Motbung, (NERO)	Senapati	Manipur
9	G.P. Govt. Womens College, Imphal, Dist.- Imphal (MN) (NERO)	Imphal	Manipur
10	Hill College, Tadubi, Dist.- Senapati (MN) (NERO)	Senapati	Manipur
11	Ideal Girls College, Akampat, Dist.- Imphal (MN) (NERO)	Imphal	Manipur
12	Imphal Art College, Imphal Dist.- Imphal, (MN) (NERO)	Imphal	Manipur
13	Jawaharlal Nehru Institute of Medical Sciences, Imphal,LE	Imphal	Manipur
14	Jiri College, Kadamtala, Jiribam, Dist.- Imphal East (MN) (NERO)	Imphaleast	Manipur
15	Kakching Khunou College, Thoubal(NERO)	Thoubal	Manipur
16	Kha-Manipur College, Kakching. Dist.- Thoubal (MN) (NERO)	Thoubal	Manipur
17	Kumbi College, Kumbi. Dist.- Bishnupur (MN) (NERO)	Bishnupur	Manipur
14	L.M.S. Law College, Imphal-1. Dist.-Imphal (MN) (NERO)	Imphal	Manipur
19	Lamka College, Lamka. Dist.-Churachandpur (MN) (NERO)	Churachandpur	Manipur

20	Liberal College, Luwangsangbam. Dist.-Imphal	Imphal	Manipur
21	Lilong Haoreibi College, Lilong Dist.-Thoubal, (MN) (NERO)	Thoubal	Manipur
22	Mangolnganbi College, Ningthoukhong, Bishenpur,(NERO)	Bishnupur	Manipur
23	Manipur College, Imphal, Dist.- Imphal (MN) (NERO)	Imphal	Manipur
24	Manipur University Library	Imphal	Manipur
25	Mayai Lambi College, Yumnam Huidrom New LE	Manipur	Manipur
26	Modern College, Porompat. Dist.-Imphal(NERO)	Imphal	Manipur
27	Moirang College, Moirang. Dist.- Bishenpur (NERO)	Bishnupur	Manipur
28	Moreh College, Moreh ,Chandel, Distt.- Chamdel (NERO)	Chandel	Manipur
29	Mt. Everest College, Senapati, P.O.- P.S. Senapati (NERO)	Senapati	Manipur
30	Nambol L. Sanoi College, Nambol. Dist.-Bishenpur (NERO)	Bishnupur	Manipur
31	Naorem Birahari College, Khundrakpam,Imphal (NERO)	Imphal	Manipur
32	National Institute of Technology, Takyelpat,Imphal New FE	Imphal	Manipur
33	Rayburn College,Newlamka,Churanchandpur New FE	Churachandpur	Manipur
34	South East Manipur College, Komlathabi, New LE Inv-3352	Chandel	Manipur
35	Y K College, Wangjing, Manipur (NERO)	Wangjing	Manipur
1	Academy of Integrated Christian Studies, Aizwal (MZ) New LE	Aizawl	Mizoram
2	Administrative Training Institute	Aizawl	Mizoram
3	Aizawl North College, P.O. Ramhlun, Dist.- Aizawl (MZ) (NERO)	Aizawl	Mizoram
4	Aizawl Theological College, Aizawl MZ NEW FE	Aizawl	Mizoram
5	Champhai College, Champhai. Dist.- Aizawal, (MZ) (NERO)	Aizawl	Mizoram
6	College of Teacher Education	Aizawl	Mizoram
7	Government T. Romana College	Aizawl	Mizoram
8	Government Aizawl North College	Aizawl	Mizoram
9	Government Hnahthial College	Hnahthial	Mizoram
10	Government Kamalanagar College,Kamlanagar,MZ,New FE	Kamlanagar	Mizoram
11	Government Saitual College	Saitual	Mizoram
12	Government Zawlnuam College, Mizoram MZ NEW LE	Zawlnuam	Mizoram
13	Governor of Mizoram, Aizawl,(MZ) New LE	Aizawl	Mizoram
14	Govt kolasib college, Kolasib	Kolasib	Mizoram
15	Govt Zirtri Residential Science College	Aizawl	Mizoram
16	Govt. Higher Secondary School, Aizwal (MZ) New LE	Aizawl	Mizoram
17	Govt. Saiha College, Saiha, Dist.- Chhimtuipui (MZ) (NERO)	Chhimtuipui	Mizoram
18	Govt. Zirtiri Residential Science College, Aizawal., (MZ) (NERO)	Aizawl	Mizoram
19	Higher and Technical Institute Mizoram	Lunglei	Mizoram
20	Hrangbana College, Aizawal, Dist- Aizawal, (MZ) (NERO)	Aizawl	Mizoram
21	ICFAI University, Durtlang North,Aizawl (MZ)	Aizawl	Mizoram
22	J. Buana College, Lunglei, Dist.- Lunglei (MZ) (NERO)	Lunglei	Mizoram
23	J.Thankima College, Aizawl, Mizoram (MZ) (NERO)	Aizawl	Mizoram
24	Govt Khawzawl College, Khawzawl, Mizoram MZ NEW LE	Khawzawl	Mizoram
25	Kolasib College, Kolasib (MZ) (NERO)	Kolasib	Mizoram
26	Law and Judicial Department Library, Aizwal (MZ) New FE	Khatla	Mizoram
27	Government Lawngtlai College, Lawngtlai (MZ) New LE Inv	Lawngtlai	Mizoram
28	Lunglei Govt. College, Lunglei Dist- Lunglei (MZ) (NERO)	Lunglei	Mizoram
29	Mamit Govt. College	Mamit	Mizoram

30	Mizoram College of Nursing, Falkawn (MZ) New LE	Falkawn	Mizoram
31	Mizoram Law College	Aizawl	Mizoram
32	Mizoram Polytechnic College	Lunglei	Mizoram
33	Mizoram University Dept of Library and information Science	Aizawl	Mizoram
34	SCERT library, Chaltlang, Aizawl	Aizawl	Mizoram
35	St Xaviers College,Aizawl,MZ,New LE	Lengpui	Mizoram
36	Synod Higher Secondary School, Mission Vengthlang	Aizawl	Mizoram
37	UGC- HRDC, Mizoram University, Tanhril, Aizawl (MZ) New LE	Aizawl	Mizoram
38	Women Polytechnic, Aizawl, Durtlang (MZ) New LE	Durtlang	Mizoram
1	Baptist College, Mission Compound, Kohima-797001, New LE	Kohima	Nagaland
2	Eastern Christian College, Padampukhuri, Dimapur (NERO)	Dimapur	Nagaland
3	Model Christian College, A G Colony, Kohima (NG) New LE	Kohima	Nagaland
4	Mount Olive College, Daklane Kohima, Nagaland NEW FE	Kohima	Nagaland
5	Mount Tiyi College, Wokha-1. Dist.-Wokha (NL) (NERO)	Wokha	Nagaland
6	Nagaland Central University	Mokokchung	Nagaland
7	Nagaland College of Education, Kohima-1 (NL) (NERO)	Kohima	Nagaland
8	Sakus Mission College (Arts), Duncan,Dimapur (NL) (NERO)	Dimapur	Nagaland
9	Sazolie College	Jotsoma	Nagaland
10	School of Agriculture Science and Rural Development, (FE)	Medziphema	Nagaland
11	St Josephs College	Kohima	Nagaland
12	St. Josephs College, Jakhama	Kohima	Nagaland
13	Zunheboto Colleg, Zunheboto, Nagaland (NL) (NERO)	Zunheboto	Nagaland
1	Chirala Govt Degree College, Chirala, Prakasam AP UPG FE	Prakasam	Sikkim
2	Devarakonda M.K.R. Govt Degree College, Devarakonda,(FE)	Nalgonda	Sikkim
3	Gandhinagar Regional Training Centre (SPIPA) NEW FE	Gandhinagar	Sikkim
4	Govt. College Rhenock East Sikkim, Reshi (SK) New FE	Reshi	Sikkim
5	Harkamaya Collefe of Education	Gangtok	Sikkim
6	Rajkot Regional Training Centre (SPIPA) NEW FE	Rajkot	Sikkim
7	Sikkim Government College, Gyalshing, West Sikkim New FE	Soreng	Sikkim
8	Sikkim Government Law College, Burtuk, Gangtok New FE	Gangtok	Sikkim
9	Sikkim Institute of Higher Nyingma Studies, Gangtok, (NERO)	Gangtok	Sikkim
1	Belonia College, Belonia. Dist. South Tripura (NERO)	Southtripura	Tripura
2	Bir Bikram Evening College, Agartala. DIST.- West Tripura	Tripura	Tripura
3	College of Teacher Education, Agartala. (NERO)	Tripura	Tripura
4	Dharmanagar Govt. College, (NERO)	North Tripura	Tripura
5	Government of Trippura, Dept of Higher Education	Narsingarh	Tripura
6	Govt. Degree College, Kamalpur Dhala (NERO)	North Tripura	Tripura
7	Govt. Music College, Agartala. (NERO)	Agartala	Tripura
8	Institute of Advance Studies in Education (Deemed University)	Sardarshahr	Tripura
9	Kabi Nazrul Mahavidyalaya, Sonamura(W) (TR) (NERO)	Sonamura	Tripura
10	Regional Institute of Pharma. Science and Technology, New LE	Agartala	Tripura

<u>QUESTIONNAIRE</u>

LIBRARY AUTOMATION SKILLS OF COLLEGE LIBRARIANS USING SOUL
2.0 IN NORTH EAST REGION.

1. College Details:

    a) Name of the College: _____

    b) College Address   _____

    c) Name of the Librarian: _____

    d) Librarian Cellphone Num._____Lanline_____

    e) E-mail address   :   _____

    f) Academic and Professional Qualification:_____

2. Collection:

    a) Text Books _____ Reference books_____

    b) Academic Journals: International__National____Magazine_____

    c) Digital Collection: e-books_____e-journals_____

    d) Any other (please specify):_____

3. Detail of ICT infrastructure available in the College Library:

    a) Computers _____Printers_____UPS_____

    b) Scanner_____BarCode Scanner_____Thermal Printer_____

    c) Xerox Machine_____Laminating Machine_____

    d) Do you have separate Server Computer ? Yes/No

    e) If yes, which operating system ? _____

    f) Name of Library Software and its version:_____

    g) College website:_____

    h) Separate Library website_____

    i) Internet connection for library:_____

4. Library automation and software installation:

    a) When did you purchase the Library Automation software? _____

    b) Did you have proper training for installation? _____

    c) Did you install by yourself? _____

    d) Did you receive support from others? _____

    e) Did you face any problems during installation? _____

f) Do you have computer expertise? _____

g) If yes, what level? Certificate/Diploma/Degree_____

h) Is there any computer technical staff in the Library? _____

5. Please give your level of skills in Acquisition module: *(put tick mark)*

Sl.No	Particulars	Advanced level	Medium level	Low level
1	Suggestions			
2	Orders			
3	Accessioning			
4	Payment			

6. Please give your level of skills in Catalogue module: *(put tick mark)*

Sl.No	Particulars	Advance level	Medium level	Low level
1	Cataloguing			
2	Export/Import			
3	User Services			
4	Reports			

7. Please give your level of skills in Circulation module: *(put tick mark)*

Sl.No	Particulars	Advance level	Medium level	Low level
1	Membership			
2	Transaction			
3	Inter Library loan			
4	Maintenance			

8. Please give your level of skills in Serial Control module: *(put tick mark)*

Sl.No	Particulars	Advance level	Medium level	Low level
1	Titles			
2	Suggestions			
3	Subscriptions			
4	Payment			
5	Check in			
6	Binding			

9. Please give your level of skills in OPAC module: *(put tick mark)*

Sl.No	Particulars	Advance level	Medium level	Low level
1	Simple Search			
2	Boolean Search			
3	Advanced			

	Boolean Search			
4	Member OPAC			

10. Please give your level of skills in Administration module: *(put tick mark)*

Sl.No	Particulars	Advance level	Medium level	Low level
1	User settings			
2	System setting			
3	Acquisition Master			
4	Catalogue Master			
5	Circulation Master			
6	Serial Master			
7	General Master			

11.   Impact of Automation skills on Library Services:

   1) Is it saving lot of time for the users? Yes/No____

   2) S it more accurate or error less while issuing books? Yes/No

   3) What services you provide after aumation? *(please put tick marks)*

      a) CAS_____SDS_____

      b) Literature Search_____

      c) Document Delivery Service_____

      d) Bibliographic Service _____

      e) Reference Service _____

      f) Accessing online full text through N-LIST _____

      g) Issue and return through Barcode System _____

      h) Laminated user card _____

      i) Smart Card typed Library Card _____

      j) User friendly and helping attitude _____

12.   Please state some limitations / drawbacks / problems confronted while using SOUL 2.0 software?
      _____
      _____

13.   Please state your suggestions to improve the SOUL 2.0 software.
      _____
      _____

                              Name and Signature of College Librarian.

Appendices III: Map and Pictures

North East Map:
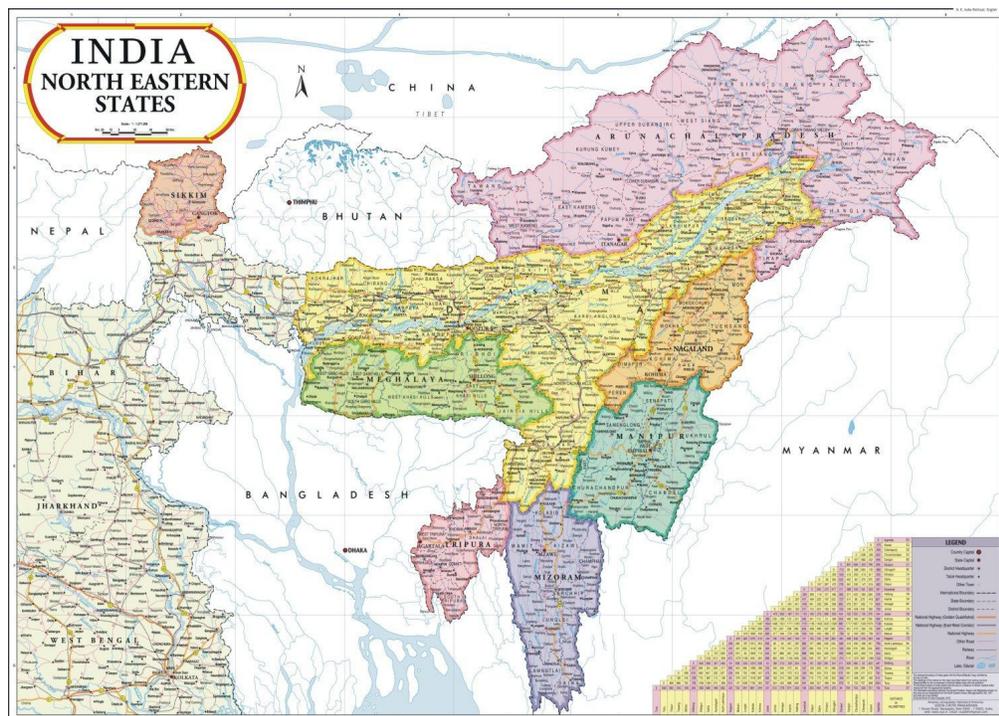
INFLIBNET Server Room:

Dimapur Govt. College, Nagaland.

Kakching Khunou College, Manipur:

Gurucharan College, Silchar.

Bapujee College, Assam

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   2342953(O)
6. Office   : College Librarian (Level 13A)
                                        Govt. Hrangbana College, Aizawl – 796007

Academic Qualification:
1. H.S.L.C   1980 under Mizoram Board of School
   Education.
2. B.A   1990 under NEHU
3. MLIS   1995 under NEHU

Service Experience at Govt. Hrangbana College, Aizawl
1. L.D.C   1981 – 1986
2. Library Assistant   1987 – 1990
3. Deputy Librarian   1991 – 2002
4. College Librarian   2003 – 2008
5. College Librarian Sr. Gr   2009 – 2013
6. College Librarian Sl.Gr   2014 – 2017
7. College Librarian Level 13A 2018 – till date

Professional Experience:
1. Organized IRTPLA 2 times as Coordinator
2. Organized UGC Workshop on Lib. Automation 1 time as Coordinator
3. Organized Book fair 2 times as Coordinator.
4. Organized 1 time RFID Training.
5. Hold two terms for INFLIBNET SOUL Coordinator for North East II

Membership:
1. Life member, Indian Library Association.
2. Life member, IASLIC(Indian Association of Special Libraries and
   Information Centre.)
3. Life member, Bible Society of India.
4. Member Secretary, Digital Library Committee, DHTE, Govt. of Mizoram.

The above information provided is true to the best of my knowledge.

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PARTICULARS OF THE CANDIDATE

NAME OF CANDIDATE : LALCHATUANA

DEGREE : Ph.D

DEPARTMENT : LIBRARY AND INFORMATION
SCIENCE

TITLE OF THESIS : **"Library Automation Skills of College Librarians using SOUL 2.0 in North East India"**

DATE OF ADMISSION : 19.08.2014

APPROVAL OF RESEARCH PROPOSAL:

   1. B.O.S : 7th October, 2015

   2. SCHOOL BOARD : 28th October, 2015

   3. REGISTRATION AND DATE: MZU/Ph.D/824 of 28.10.2015

   4. EXTENSION (IF ANY) : NIL

Head
Department of Library and Information
Science

College Library Automation in North East Region Using SOUL 2.0

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Abstract

Implementation of information and communication technology in the library has changed the working environment of college Libraries in the Country. There is no doubt about the fact that significant changes have taken place in libraries in the North Eastern Region too due to the application of information communication technology (ICT) in automated cataloguing, circulation systems etc. Most of the college libraries are using SOUL 2.0 software developed by INFLIBNET Centre for their library automation. The present paper is based on a survey undertaken by the author by selecting 5 college libraries each from 8 states of the North Eastern Region to understand the skills and competencies of the college librarians developed in the process and also providing efficient library and information services.

Keywords

Library Automation; College Librarian; North Eastern Region

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Electronic access

The journal is available at www.jalis.in

I. Introduction: There is a sea change taking place today in Library due to the impact of information and communication technology and its application of Computer in the Library works. We hear a lot of about Library Automation in College Library as well. Library Automation is nothing but application of machines such as Computers to the routine Library House Keeping operation like acquisition, serial control, cataloguing and circulation.

The Library plays an important role in Higher Educational institution, which is the hub of the teaching learning activities where students, researchers and teachers can explore relevant resources of Information. In the age of information communication technology, computers are being used for day – to – day Library works which save the time of users and the Library Professional, at the same time avoid duplication of works and make library service smooth and effective.

Nowadays, the information seeking behaviour of Library users has dynamically changed. They wanted relevant, authentic information very quickly within a short time. This concept has posed challenges for Library professionals for marching towards Library Automation.

The word Automation is derived from the Greek word, "automose", which means something which is power of spontaneous motion or self-movement. The term was first used by D.S Harder in 1936.

1.1 Library Automation: In India, some Libraries and Information Centres made efforts to automate their library routine and information services in 1960's with punch card. After two decades, general computer was available at Kanpur and Bombay. INSDOC was the leader in experimenting with Computer for their application in documentation and information retrieval works in 1964.

In the Library scenario, Library Automation means using of Technical equipments such as Computer and internet accessibility, Printers, barcode scanner etc. in the Library. The automation of a Library pushes up the quality and standard level and time saving of user and staff.

Library Automation, Networking, Digitization and Website Development are fast changing towards improvement and quality of Library and Information services. With these automation and networking

activities, users get an easy access to large quantity of Library resources which consist of books, journals, research project, dissertation and thesis and many online e-resources. Therefore, it is imperative that libraries need to be automated fast so as to follow other operations and developmental activities. As told earlier, North East Region comprises eight states, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The Library automation activities are changing very fast. Library professionals, Library authorities and Library users have realise its importance keeping in view the national and global scenario.

1.2 Library Management Software:

Several Library Management Software are available at International and national level, which are designed to manage different library routine work. Whereas users of the Library management software have different taste, popularity of the software also varied. Most of the software are integrated and have modules for the different activities or task carried out in the Library such as acquisition, cataloguing, circulation, serial control, administration and reports.

The Library management software is broadly divided into two by differencing in terms of money involved.

They are: Commercial software and Open source software.

1.3 Commercial Software: Commercial Software are generally designed and developed by reputed organization and firms. Many efforts and devotion by experts in the field of computer science and Library science are involved and hence it is more reliable for different woks carried out in the library. As the software is commercial, it requires paying the cost of the software. Many small libraries cannot afford to use due to financial constraints.

1.4 Open Source Software: Open source software for library management software is developed and designed towards public interest. It is available in the internet, downloadable freely by anyone. The source code and copyright can be obtained from the net, and it is freely allowed to be modified as per the users' convenience.

By clubbing together, some examples of the Library Management Software is mentioned in the proceeding table.

Table-1: Library Management Software

AGORA	*GREENSTONE*	MAITRYEE	SOUL
ALICE for windows	HINARY	MEMLIB	TINLIB
CDS/ISIS	ILM	MIDAS	TOTAL IT SOLUTION
DIGILIB	*KOHA*	NIRMAL	ULSIS
DOCUWARE	KULMARK	OARE	VIRTUA
EASYLIB	LABRARY PLUS	PALMS	VLTS
EDLS	LIBERTY 3	PHP My Library	WEBLIS
E-GRANTHALAYA	LIBINFO	PROTA/TEEAL	WINISIS
EGRARY	LIBSYS	SLIM	WYLISYS
GLAS	LMS	SOFTLINK	X-LIB

Source: https://:www.academia.edu.in,   http://shodhganga.inflibnet.ac.in.
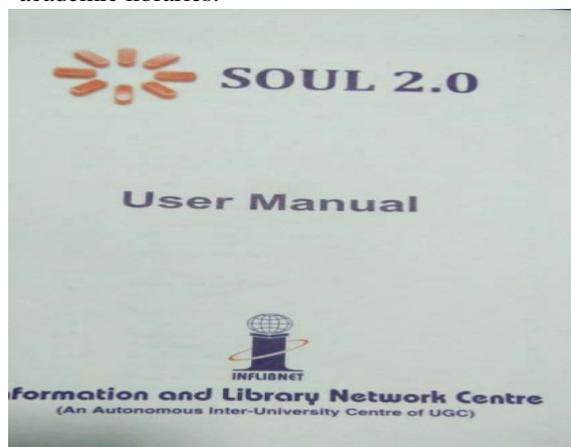
There must be other library management software available presently, of all these 40 numbers listed software, CDS/ISIS, GREENSTONE, and KOHA are open source software popular in the Indian context and of these, KOHA is mostly used by the Libraries as one private firm InKOHA, Kolkata based firm can provide service regarding customization as well as data migration works. Among the commercial software, LIBSYS, SOUL and TOTAL IT SOLUTION are commonly used in academic

libraries of India. Of them, SOUL developed by INFLIBNET, (an autonomous body of inter University Centre of UGC) is mostly used by the College libraries in India.

1.5 SOUL 2.0: Features:

Software for University Libraries (SOUL) is state-of-the-art integrated library management software

designed and developed by the INFLIBNET Centre based on necessary activity of College and University Libraries. It is a user-friendly software designed to work under client-server environment. SOUL 2.0 is compliant to international standards for bibliographic formats, networking and circulation protocols. On looking at the name of the SOUL, it looks suitable only of University library only, but it is nicely flexible enough to be used for automating all types of academic libraries.

The first version SOUL 1.0 was released during CALIBER 2000. The database of the SOUL 1.0 was designed on MS-SQL and was compatible with MS-SQL Server 7.0 or higher. The latest version SOUL 2.0 was designed for latest versions of MS-SQL and MySQL. SOUL 2.0 is compliant to international standards such as MARC 21 bibliographical format.

1.6 Library Automation scenario in North East India using SOUL 2.0:

The Library Automation scenario using SOUL 2.0 in the North East Region with special reference to College is steadily progressing. INFLIBNET Centre, Gandhinagar, Gujarat is the pilot agency for the development of Information and knowledge in the field of Library services.
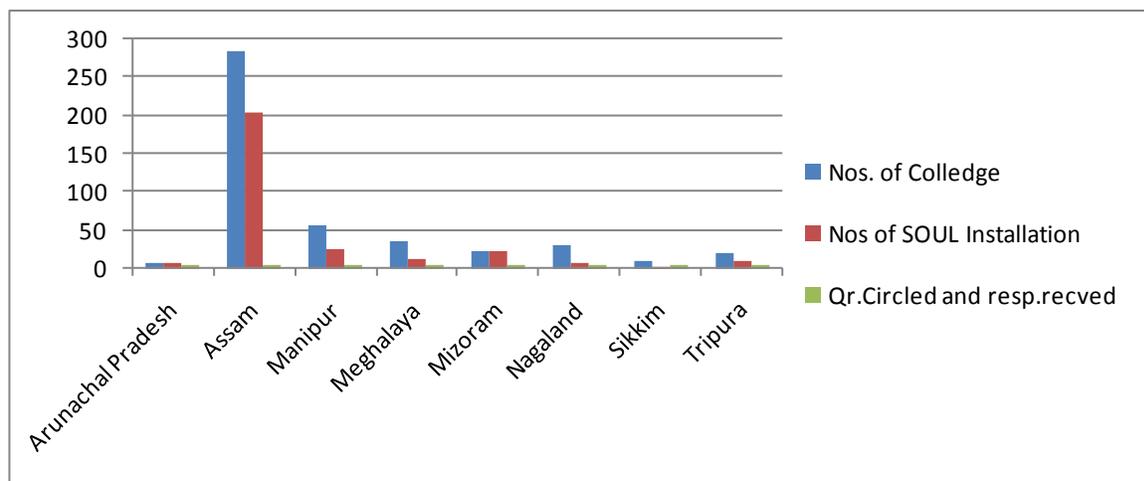
North Eastern Region comprising eight states is divided into two parts, four states in one group. To develop towards library automation using SOUL 2.0, INFLIBNET Centre appointed two SOUL Coordinators such as, North East I covering Assam, Meghalaya, Sikkim and Tripura. In the coverage area of **North East I** comprising 4 states, number of Colleges under Section 2(f) and 12B of UGC Acts, 1956, there are 350 colleges available, 230 Colleges are using SOUL 2.0 and the user percentage becomes 44.25.

Meanwhile, in the North East II covering Arunachal Pradesh, Manipur, Mizoram and Nagaland states, number of College available is 124 and number of SOUL users is 69 and the users' percentage becomes 64.5. In order to highlight an overview of Colleges in the North East Region, below mentioned table presents the total number of Colleges and their SOUL installation in the state-wise North East Region:

Table 2: Nos. of Colleges in North-east Region under section 2(f) and 12B of UGC Act 1956and SOUL 2.0 installation status

SLNO	STATE	Nos. of College	No. of SOUL Installation	Questionnaire Circulated
1	Arunachal Pradesh	9	7	5
2	Assam	284	205	5
3	Manipur	56	25	5
4	Meghalaya	35	13	5
5	Mizoram	24	24	5
6	Nagaland	31	8	5
7	Sikkim	11	2	5
8	Tripura	20	10	5
	Total	470	294	40

Source : https://:www.ugc.ac.in.; http://:www.inflibnet.ac.in - access on 10.4.2019

2 SOUL 2.0: Housekeeping Operation Modules:

SOUL 2.0 library management software has different Housekeeping operation modules according to their entity and nature. It has 6 main modules and various sub-modules as per area of operation. The SOUL 2.0 consists of the following modules. Each module has further been divided into sub-modules to cater to its functional requirements:

1) Acquisition
2) Catalogue
3) Circulation
4) OPAC
5) Serial Control
6) Administration

The in-built network feature of the software will allow multiple libraries of the same university to function together as well as access to thedistributed databases installed at university libraries and union catalogue mounted at INFLIBNET using VSAT network.

2.1 Acquisition:

The first and important work which the Librarian has to do is Acquisition or procurement of books. Procedure for purchase of books is varied to one library to another. The module enables library staff to handle the entire major functions, such as:

- Suggestions Management;
- Order Processing, Cancellation and Reminders;
- Receipt, Payment and Budgetary control;
- Master files such as Currency, Vendors, Publishers etc.; and

- Reports.

2.2 Catalogue:

Catalogue module facilitates library staff to process of the newly acquired library resources. It also used for retrospective conversion of library resources. During the period of traditional library service, cataloging service was done manual and hand written. Modern library management software likes SOUL allowed printing of Catalogue cards in AACR2 format. The strong features of catalogue module are follows:

- Allows cataloguer to create their own templates for data entry of different library resources;
- Different templates for leaders and fixed fields of MARC21;
- Allows user-generated customized reports;
- Facilitates authority database of person name, corporate body,
  Subject headings and series name;
- Supports copy cataloguing in MARC21 format by using ISO-
  2709 standard;
- Master database of publishers;

2.3 Circulation:

This module takes care of all possible functions of circulation. Sufficient care has been taken in designing this module starting from membership management, maintenance and status of library items, transaction, ILL, overdue charges, renewals & reminders, search status and report generation according to the status of the items. The circulation module is fully compliant with the NISO Circulation

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and Interchange Protocol (NCIP) version 2.0 as well as SIP2 for electronic surveillance and RFID based transaction of the items. Major functions of the circulation modules are:

- Membership;
- Transaction;
- Inter-library loan;
- Overdue charges;
- Reminder;
- Search status;
- Maintenance of the items such as binding, lost, replace, missing, withdrawal, etc.; and
- Report generation based on the various requirements.

2.4 On-line Public Access Catalogue (OPAC)

One of the major attractions of SOUL is its robust On-line Public Access Catalogue (OPAC). The OPAC has simple and advanced search facility with the minimum information for each item including author, title, corporate body, conference name, subject headings, keywords, class number, series name, accession number or combination of any of two or more information regarding the item. Major functions provided in the OPAC module are:

- Simple Search;
- Boolean Search;
- Advanced Boolean Search;
- Displaying and downloading of records in MS Excel, PDF or MARCXML; and
- Search support for the items that are in the acquisition process in the library.

2.5 Serial Control:

Managing serials is the most complicated job for a library. The module keeps track of serials in the library effectively and efficiently. The serial control module is developed based on the KARDEX system and the following functions built into it:

- Suggestions;
- Master databases;
- Subscriptions;
- Check-in of individual issues of journals;
- Payment, reminder, binding, and title history;
- Export / import by using ISO 2709 bibliographic exchange format;
- Article indexing of journal/book articles;
- Cataloguing of electronic journals; and
- Keeps track of the history changes of the journals.

2.6 Administration:

In addition to the features available in the Administration Module of the SOUL 1.0, some more features have been added to the administration module of the SOUL 2.0 as per inputs from the various SOUL users and requirements of the library staff. The module has been divided into three major sub-modules for accommodating the new features. These three sub-modules are User Management, System Parameters and Masters. The Administration Module provides the following:

- Grouping of users based on the policy;
- Transactional rights over the systems;
- Transaction level security to users;
- Various configuration settings such as labels, e-mail and other
- parameters related to the software use; and
- Common master databases being used in modules.

Here we can set rules and feed standard information for pre-defined entry needed for our LMS.Select Administration from the menu which, in turn, provides following options:

1) User Settings
2) System Settings
3) Acquisition Master
4) Catalogue Master
5) Circulation Master
6) Serial Master
7) General Master

3. Skills and competencies:

Installation and use of SOUL 2.0 by the College Libraries of North-Eastern Region have improved the skills and competencies of College Librarians and staffs on the key areas like:

- Acquisition
- Cataloguing
- Circulation
- Serial Control
- OPAC
- Administration.

The author of this paper conducted survey of 5 Libraries each from 8 North Eastern States (8x5=40) and based on my onsite visit and interaction with College Librarians, the following are the benefits of using SOUL 2.0.

1. Library Automation can be considered as one of the major criteria for the assessment of Institutional Library development.
2. Library Automation with bar-coding system helps the staff for less error in the circulation counter while doing issue and return of books.
3. Library computerization resulted time saving of users as well as staff.
4. Library Automation helps the staff to avoid repetitive works.
5. Creating user database and generating users' Identity card with the help of Library Automation help the staff for detection of unauthorised borrower. It also protected exceeding permitted number of books.
6. SOUL 2.0 is the most popular and most preferred Library Management software in North East Region.
7. INFLIBNET, the developer of SOUL software is the most reliable set-up body of Central Government in the Country who can organise periodic Training for the users. The developing scientists of SOUL are combination of Library Science as well as Computer Science.
8. It was known from the personnel discussion at the spot visit that College authority should give more importance to the quality development library as well as personnel development.
9. It is highly appreciable if the INFLIBNET Centre makes sanction for organising INFLIBNET Regional Training Programme on Library Automation for all North Eastern states. It will be better if INFLIBNET appoint SOUL Coordinator and Technical Assistant for all states of North Eastern Region.

4. Conclusion:

Implementation of SOUL 2.0 in the College Libraries of North East Region is a great boon to College Library staff in which Library management has become very easy in serving the users. INFLIBNET Centre has to come up with SOUL 3.0 version in which many social media tools can be integrated with the SOUL 3.0 software. Due to the internet connectivity and low speed, many Librarians are not able to provide web based services to its user. This is a great problem in most of the Libraries particularly the libraries located in remote places.

However, Library professionals are taking great interest in implementing SOUL 2.0 software which is one of the most effective criteria of NAAC assessment. Authorities are had started realizing its importance which contribute to qualitative development of the Colleges located in North East Region.

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LIBRARY AUTOMATION SKILLS OF COLLEGE LIBRARIANS

USING SOUL 2.0 IN NORTH EAST INDIA

ABSTRACT

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LIBRARY AND INFORMATION SCIENCE DEPARTMENT

MIZORAM UNIVERSITY, AIZAWL

CONTENTS

ABSTRACT

1. Introduction:

Automating a College library is the process for better management of its functions and services. "Library automation in simple terms is the application of computers and utilization of computer based products and services for carrying out different library operations and functions".(Azeez T A, Abdul 2004) An automated College library can serve the teaching and learning community more effectively. A reduction in the time needed for routine operations can be utilized to provide better customized services to the users. Automation needs proper planning and active implementation. The modernization of the library helps the students and teachers to become skilled information users and life-long learners. A process of great change has been taking place today in libraries due to the impact of information technology and its application in library operations. We hear a lot about library automation in libraries and Library automation is nothing but application of machines viz. computers to the routine library house-keeping operations such as acquisition, serial control, cataloguing and circulation. Library automation may be defined as the application of computers to perform traditional library house-keeping activities such as acquisition, circulation, cataloguing, and reference and serials control. Automation is used to reduce the amount of staff time devoted to repetitive (and often less challenging) activities that must be done in any properly functioning library. It is to be remembered that, various library operations are automated, not the library as such.

2. **Objectives of Library Automation:**

- To maintain bibliographical records of all materials, in a computerized form.

- To provide bibliographical details through a single enumerative access point of holdings of a library.

- To reduce the repetition in the technical processes of housekeeping operations.

- To provide access to information at a faster rate.

- To share the resources through library networking.

- To implement new IT processes to provide high quality information.

3. **Need for Library Automation:**

From the above objectives, we can say that needs of library automation has several reasons. Use of computer is present in all areas depending upon its usages. They range from acquisition control, serial control and cataloguing and circulation control. They are also used for library manager's evaluation of reports, statistics, etc. For the good administration of the library, computers are used in all levels of work. Above all, the unique characteristics of computer made it the right choice of the library world. Computers right from the beginning are considered to aid man, in doing various operations.

Library Automation using specific software will help in the following:

- Capacity to handle any amount of data and information.

- Participating in network programmers and resource sharing.

- Flexibility in information search.

- Standardization of library procedures.

- Speedy processing of information and its retrieval.

- Provide better bibliographic control at local/regional/national and international level.

- Facilitate interdisciplinary nature of research and information.

- Economic implication of latest information technology.

- Overcome geographical and other barriers to communication.

Human ability capability and strength is limited to do repeated job for the whole day. There can be committed error and mistake from the library staff while doing circulation. Automation and networking of libraries are still in their formative stages in India. Majority of the College Libraries are not yet accustomed to automated environment. Library Automation covers the progress in the areas of librarianship as system analysis and design, planning, acquisitions, cataloguing, serial controls, circulation, and information retrieval. Library Automation brings together all records and document together. It will help the beginners of Library users for finding what they are looking for their information needs. On the other side, Library automation will facilitate the staff for providing speed, accurate and error free service to the library user. Computer is universally accepted tool to provide assistance to man in all fields. In the field of Library Science, the need for making use of computers i.e library automation was felt a must.

4. Advantages of Library Automation:

Different activities of a library are routine works in nature; a few are repetitive. Automation of these activities helps in managing the library's resources in a better way at the same time saving time, money and manpower. For example, once the bibliographic details like author, title, edition, publisher, price, ISBN number, etc. are entered at the time of ordering, the same data can be used for accessioning, cataloguing, OPAC, and Circulation. Other important factors associated with automation are speed, and accuracy. One can imagine the time saved in literature search and in preparing bibliographies. Soehner (2015) said that "Communicating to employees the need for change, the process to be used, and the vision for the new department was crucial in resolving concerns and encouraging employees to come into agreement with the new direction". Automation also offers freedom from doing repetitive and routine works as well as enables providing efficient services properly and more efficiently cutting down time and improving

productivity. Automation also facilitates generation of a number of reports for better decision making in the effective management of the library. Availability of various statistical and other usage reports and performance reports will ensure better appreciation from library users. For examples, vendor performance analysis is possible. Subject-wise or project department-wise budget can be monitored. Circulation data can provide information on titles that are in great demand so that more copies can be procured if needed. Many current awareness services like current additions, contents of books and journals, etc. can also be provided to users. (Moorthy, 2004).

5. **Library automation in the North-East Region using SOUL 2.0:**

In the field of College and its library development as well as Library Automation, Northeast states are still lagging behind as compared to other states in India. Among the Northeast states, Assam the oldest state is the most advanced in Library Automation. Other states like Manipur, Nagaland, Tripura and Sikkim were for behind in Library Automation. The table given below – available in www.inflibnet.ac.in showed the picture of Library automation using SOUL 2.0 in North East Region.

Sl.No	State	No of College	SOUL users	Percentage
1	Arunachal Pradesh	9	7	77.8
2	Assam	284	205	72.2
3	Manipur	56	25	44.6
4	Meghalaya	35	13	37.1
5	Mizoram	24	24	100
6	Nagaland	31	8	25.8
7	Sikkim	11	2	18.2
8	Tripura	20	10	50

	Total	470	294	62.5

As per the record available from INFLIBNET website mentioned above, it can be seen that there are 206 installation of SOUL in the North Eastern States. If we look at this figure, Assam has highest record of SOUL installation reaching 152, Mizoram as the second highest having 23 installation and Manipur have 14.

6. Research Design:

6.1 Statement of the Problem:

Library is a trinity of Book, Readers and Staff. College Library which support and supplement Higher Education is an important component of Academic set up. Therefore, the organisation of library books and other documents, convenience of the users and staff performance depend much on automation. College Library's automation facilitates easy and smooth functioning in handling the Library resources and providing efficient services. The SOUL 2.0 developed by INFLIBNET Centre is a boon to College Libraries is India and more specifically Colleges in North Eastern Region. It is therefore essential to study the use of SOUL 2.0 in different Colleges of North Eastern Region in order to understand their applications, library management functions and provision of services. It is in this context, the present Research problem is under taken by the scholar to make a detail study on use of SOUL 2.0 by the College Librarians in the North Eastern Region.

6.2 Objectives of the study:

The objectives of the proposed research problems are as follows:

a) To understand the benefits of Library automation in College Library.

b) To appraise the impact of automation on efficient and effective library services.

c) To understand what automation, and networking skills developed by the library professionals in the changing information environment.

d) To obtain feedback from the College Libraries about the problems faced and solutions for same to overcome these barriers.

6.3   **Significance and Scope of the study:**

The scope of the present study is limited to 40 College Libraries of the 8 (eight) North Eastern States by selecting randomly 5 (five) each from one State who were doing library computerization using SOUL 2.0 Software. Software for University Libraries (SOUL) is a state-of-the-art integrated library management software designed and developed by the INFLIBNET Centre based on requirements of college and university libraries. It is a user-friendly software developed to work under client-server environment. The software is compliant to international standards for bibliographic formats, networking and circulation protocols. After a comprehensive study, discussions and deliberations with the senior library professionals of the country, the software was designed to automate all housekeeping operations in a library. The software is suitable not only for the academic libraries, but also for all types and sizes of libraries, even school libraries.

Since the automation skills is very much important for library professionals to provide efficient and effective services, the present study assumes great importance for College Librarians to develop their skills in SOUL 2.0 particularly in North Eastern Region. This reason has prompted me to take up this research problems.

6.4   **Hypotheses:**

The present research problems under the study are subject to following tentative hypotheses:

i)   Library Automation skills enable professional competency development of library professionals to provide effective and efficient service.

ii)   Lack of training in SOUL 2.0 creates obstacles in library management functions and caters users effectively.

iii)   Lack of ICT infrastructure and authority support is the major problems of library automation in North East Region.

iv)   Library automation and Networking can lead to access global academic resources and promote teaching-learning in and a research.

6.5   **Research methodology:**

In every research, methodology for collecting data is mandatory. The present study adopted the following methods for collecting data from the respective College Library of North East India.

1) **Questionnaire Method:** The scholar prepared a structured questionnaire to be distributed among the SOUL 2.0 using College Libraries 5 each of North Eastern Region to solicit information with regards to application of SOUL 2.0 features and services which benefit the users.

2) **Interview method:** The scholar made an attempt to conduct special interview with College Librarian during on-site visit for collection of data. A personal interaction is

always useful to get first hand information and problems encounter by the practicing College Librarians.

3) **Observation method:** The scholar during his study has undertaken on-site visit to selected College Libraries in the North Eastern Region where the SOUL 2.0 is in full operation and maximizing the benefit to the same. The experiences gained is more beneficial for this research problems under taken by the scholar.

7. **Data analysis and interpretation:**

As stated earlier, the scope of the study is limited to College in North East States who are using SOUL 2.0 Library management software for their library automation. Data collected are scientifically analyzed and interpreted using quantitative data analysis software namely MS excel spreadsheet in order to derive appropriate findings and conclusion.

8. **Organisation of study:**

The present study is divided into six chapters as stated below:

Chapter 1   Introduction

Chapter 2   Library Automation: objectives, advantages and its application in libraries.

Chapter 3   Status of Library Automation in North East Region using SOUL 2.0

Chapter 4   Library Automation skills in College Libraries using SOUL 2.0 in North East Region.

Chapter 5   Data Analysis and Findings

Chapter 6   Suggestions and Conclusion

Bibliography

9. Avenues for further Research:

Web technology is moving very fast as a result there are many versions likes web 2.0, web 3.0 and so on are approaching in a near future. Therefore Library software presently in 2.0 web technology is also taking new shape when the new versions are in operation. Therefore, many library software presently in 2.0 version are going to be change with many additional feature which has a great impact on the quality of Library and Information Services and the resource available in the Library are going to be more accessible by the user.

After pursuing my present research works, the following areas are emerges in which more research can be conducted.

1) Impact of Web 3.0, Web 4.0 Library Software in improving the quality of Library and Information Services.

2) Use of Social Media tools by the Libraries at the College and University.

3) Social Media feature and Quality of Library and Information Services.

4) Management efficiency of Library using SOUL 2.0 Software.

5) Library and Information Networking among the College Library using SOUL 2.0

6) Role of INFLIBNET in improving the quality of Library and Information Services using SOUL 2.0

10. Suggestions:

Based on the present study and in order to improve Library automation skills of College Librarians using SOUL 2.0 in North East Region, and to improve the quality of College Library service, the following suggestions and recommendation are made for future development:

➢ College Librarians in North East Region have lack of ICT knowledge whereas application of different types of automation equipments is mandatory task for improvement of services in the Library. Hence, in order to improve skills of working, the authority should insisted proper training for the existing librarians.

➢ College Librarians in the North East Region should have attitude and zeal towards steps for improvement of quality to have Library Automation. New ideas, new technology imparting mind to be strengthen of their own will.

➢ Towards building of quality improvement and development into the same level, the authority of State Government should implies a fair competition among the Librarian as well as College library functioning.

➢ Most of the College Library does not have proper gate keeper and staff shortage also high in North East Region. Hence, installation of RFID and CCTv is highly important and recommendable.

➢ There should be regular budget allocation at the Directorate of Higher and Technical Education Department for the success of Library's growing.

- INFLIBNET Centre should make sanction for conducting state wise training for SOUL 2.0 at least once in a year and appoint one College librarian from all state of North East Region to work as SOUL Coordinator.

- INFLIBNET Centre should take initiative for creating and building Institutional Repository (IR) for all College in North East Region and librarian should act as coordinator.

- Provision of library network for SOUL 2.0 users may also be explored by INFLIBNET Centre.

- Respondents also opined that the SOUL 2.0 may be developed on Linux platform and having the facility for spell checker and multi lingual system having other regional languages.

- The present import-export is having some technical difficulties which need to be easy and compatible to other software.

- Moreover, SOUL 2.0 would be more user friendly and be compatible inbuilt with RFID technology.

- SOUL 2.0 should form part of curriculum and syllabus by all the LIS Schools in India.

11. Conclusion:

The fast changing development of Information Technology and its application in many field of knowledge changed the environment of working, living and growing. In modern Library, this new gadgets on IT is applied for the working of library staff and for providing of latest information to the users. Library users in a College Library are mainly teaching staff, students, and non-teaching staff. They are always busy

of their own ways. Within a short period of time, they want to get required information from the Library.

On the other hand, new development of information communication devices which applied in the present day are not included in the syllabus during their studying period. I may certainly hard to catch up such development for the senior Librarians. Exactly, that is true statement as new technology which were applied in modern College library are out of the syllabus. The scholar of the present studies also such person, that there was no computer in the Department of Library and Information Science, NEHU.

Though, the Librarians may not have good knowledge of Information technology or computer skills, there should be intensive vision for the quality development to catch up the new equipment which will help Library routine works of housekeeping operations. For new appointment of Librarian, Library Science and Computer Science is now equal importance. To become a College Librarian, UGC or State Government authority may in future, insist double degree on Library Science as well as Computer Science.

There are number of new concepts in a present day such as Web 2.0, Library 2.0, Learning 2.0, whatsapp, facebook, twitter etc. which are all social media are applicable in the College Library. These new concepts can be used for user's services for providing information likes overdue notice, reservation of borrowed books to them. In connection with the present study, the scholar visit INFLIBNET Centre during 4 – 11 August, 2019, it was known from the Scientist who are developing team of SOUL Software that the new

version of SOUL 3.0 is under test period, and they have informed me that Chat platform based on mobile number will be inbuilt on SOUL 3.0 so that question and answer can be shared each other.

Based on the present study, it is obviously helpful and learned that Library Automation using SOUL 2.0 lifted up level of quality, working environment of Library, skills and competency development of existing College Librarians. Library Automation is much beneficial for the Staff for speedy works, accuracy and less error and for library users to save the time spent. College Librarians are expected to update and improve skills and competency in technological development. Not only automation using proper software, but also to apply other equipment such as CCTV, RFID to protect theft and stolen of books from the Library.

Towards library automation, College Librarians in the North East Region are expected to make them up to date as the technology development marching fast. They should agree to go for advance training in the areas of new knowledge. On the other hand, INFLIBNET the developer of SOUL software must be organized free training for the College Librarians. Sanction for organizing INFLIBET Regional Training Programme on Library Automation (IRTPA) in every states of the country every year. SOUL section in the highly required to strengthen and provide more fund for the College Library Automation at INFLIBNET Centre, Gandhinagar, Gujarat.