

# Emerging Technology Skills among Library Professionals of Autonomous Engineering College Libraries in Karnataka

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**Abstract** - Library and information centre are of perennial importance to professional education institutions through all ages. Success of any library system depends on its workforce. Skills and abilities of library professionals plays vital role in serving their users to make them successful in their academic endeavors. Emerging technology Skills of library professionals working in autonomous Engineering College of Karnataka are analyzed to find the status of their skills and to make further recommendations. It is found that library professionals are having better skills in handling emerging technologies. Recommendations are made to improve skills further through various suggested ways.

**Keywords:** Emerging Technology, Skills, Competencies, Libraries, Autonomous Engineering Colleges, Analysis, Knowledge

## I. INTRODUCTION

Global information scenario is swiftly transforming with the influence of emerging trends and technologies. Information technology and libraries are closely related due to their common entity. Advancement in human intellect, provoked thrust to accelerate innovations and bring in more and more novel techniques and technologies. Recent times witnessed extreme innovations in various fields particularly in the field of information technology. Ample technologies emerged out of innovative works profoundly impacted information creation, management and services.

Emerging technologies gives solutions to many problems, aides to develop on many existing facilities, and accrue opportunities to carve new facilities. Trends in information management and information services are also re-directed into new paths owing to many influencing factors.

Factors influencing present trends:

1. Volatile technologies
2. Tech-savvy hyperactive user behavior
3. Hyper-connected societies
4. liberalized access to information
5. re-defined data security
6. snowballing digitalization of business and administration at all levels
7. user centric and user driven content and services
8. Online and collaborative learning environment

ICT technologies intensely influenced all library subsystems. Library resources are increasingly turning into digital and online resources. Libraries roles are inclined

towards digital and online information services. Users are progressively skilled in technology usage and highly dependent on technology for most of their activities, hence their information needs and usage. Library operations are completely mechanized. Technology has also reengineered library infrastructure and ambience. All these developments inevitably impacted library profession. Library information profession is one of the top listed professions, immensely affected by information technology wave. The core knowledge and skills of conventional librarianship, information resources, knowledge classification, knowledge cataloguing, information services have to be reformed into the context of information technology environment. Core skills and competencies have to be blended with technical skills and competencies to handle technological work frame, new strategies are required to manage change.

### A. Emerging Technologies

In general emerging technologies are defined as the technologies that are still in the stage of emergence not well established into their fields of application, seems to be promising aides in problem solving and open new opportunities for advancement of areas of their application.

The World Economic Forum (WEF) defined emerging technologies as “technological breakthroughs promise innovative solutions to the most pressing global challenges of our time”.

Key characteristics of emerging technologies are:

1. They lead to improvements in people's lives
2. Offer new ways of conducting business
3. Support indigenous practices
4. Radical novelty
5. Relatively fast in growth
6. Coherence
7. Prominent impact
8. Uncertainty and ambiguity.

Consideration of technologies as emerging differs based on the geographical context and subject area. Many technologies that are well established in developed countries are considered as emerging in developing countries, same way some technologies considered as emerging in a subject area are not new to some other subjects. Emerging technologies considered for the study are for libraries based on the Indian context.

Important Emerging ICT technologies identified are:

1. Mobile technologies
2. Cloud computing
3. Web 2.0 technologies
4. Web 3.0

### *B. Skills and Competencies of Library Professionals Required To Handle Emerging Technologies and Trends*

Propagation of technologies into libraries transmuted all facets of library system, its workflow and service delivery methods. Library patron's behavior, information needs, and their service expectations are highly influenced by technology. Libraries further more have to think out of box to frame innovative services besides adopting technologies emerged as per trends. Success of any new technological implementation, any innovative practices or services highly depends on the skills of the human workforce handles them. Hence competent and skilled library human resources are crucial for success of any library at all ages, but the set of skills and competencies at present are inclined towards technology. Library professionals need to advance their skills and competencies as per changing trends to be successful in present age. "Those professionals that anticipate and embrace change constructively, creatively and intelligently will be the ones, who are most likely to survive, prosper, develop and succeed rather than decline and suffer in the future"( Gill, 2016). Agility in advancement of technology and trends demands library professionals to be more dynamic, strategic and proactive in equipping themselves with capabilities to handle any type of changes.

## **II. REVIEW OF LITERATURE**

Defining the set of skills and competencies required to implement and manage emerging technologies in libraries is one of the major objectives of this study. Relevant studies under taken in different parts of the world are reviewed to fine tune the study into original and value added tool for practicing librarians, new aspirants for library profession, for the recruiters and for LIS curriculum designers.

### *A. Emerging technologies*

Various technologies emerged in recent times highly influenced libraries Abram (2007), he discussed on web 3.0 in brief, library 2.0, librarian 2.0. Web 2.0 is shifting of web towards user need, characterized by open communication, free sharing and re-use, de-centralization of authority. Arora (2009) presented in what terms library 1.0 has been transformed into library 2.0 along with highlighting the advantages of library 2.0 technologies to libraries and also insisted that use of library 2.0 technologies in library services will enhance the reputation of the libraries, attract more users towards library. Scale (2009) put forth the possible ways of collaborating cloud computing and web technologies for better library practices and services.

Cervone (2010) argues that librarians need to be careful in defining emerging technologies since emerging technologies considered in one context may not be new in other context. "Impact of mobile communication on possible wireless libraries is brought out. Economic and social changes are bound to give a fillip to online or e-education using Web based technologies" Salgar (2004). Mobile technologies are highly impacted library services. "The mobile revolution offers both challenges and opportunities for academic libraries" Lippincott (2010).

Anbu and Kataria (2015) studied on application of mobile technologies in libraries, mobile services while emphasis is given for mobile web sites. technologies may be boon or bane to libraries alerts Sandhu (2015) in his discussion on major emerging trends in education system, changing expectations of students, emerging trends in library and information field, emerging staff skill set and roles, challenges in adapting them and opportunities and strategies to overcome those challenges.

Hayman & Smith (2015) developed a sustainable decision making model for integrating emerging educational technologies into library instructions based on literature review and experience from professional practice.

Sethi (2015) discussed on basics of cloud computing in library context. There is a paradigm shift in creation and dissemination of knowledge for which libraries have to create stage called by Johnson (2016). International Federation of Library Associations and Institutions (2016) reported the results of study undertaken by it since 2013. In 2013 IFLA identified 5 important trends and future of libraries. They hold discussion and conducted case studies on the identified trends at various countries world over and confirmed the results of discussions. Some of the highlights of the trends reported are 'Libraries need to adapt new and innovative procedures and services based on user preferences', 'trust, neutrality, free and equal access to information, and freedom of expression are key features of the library', 'Library services are increasingly digitalized and remotely accessed', 'Librarians need to indulge in continuous learning and continuous up-gradation of skills and embrace new', 'Coordinated and collaborative working environment. Innovative and maker spaces should be part of present libraries Letnikova and Xu (2017).

### *B. Skills and competencies required for library professionals to handle emerging technologies*

Mazumdar (2007) identified some skills required for library professionals to work in technology enabled web based borderless library. Identified skills are categorized under technical skills, traditional, and managerial skills. American Library Association (2009) presented 27<sup>th</sup> edition of Core Competencies of Librarianship. The technological knowledge and skills section provides set of skills required to manage technologies and technological environment in libraries.

Canadian Association of Research Libraries (2010) prepared Core Competencies for 21st Century CARL librarians. . Key technical competencies mentioned in the model are Integrated library systems, Emerging web technology, Electronic resources management , Web page development, Institutional repositories, Learning management system, and Database management. Corral (2010) reviewed the changing roles of librarians in wake of technology intervention with traditional library roles. The study identified that present day librarians should have skills to manage hybrid environment both traditional and technical and called it as blended librarianship means professional librarian blended with technical skills.

Hui-fang (2010) presented the structural model of knowledge based librarians in networked environment and stresses the need for development of structural model to recognize and utilize the talent and creativity of knowledgeable librarians to their full extent. Helen (2010) reported about the research study undertaken in Australia to assess skills, knowledge and attributes required for librarians in ever changing world of emerging technologies. The study identified web 2.0 world and beyond is the most prominent emerging technology, the paper gives clear picture on impact of web 2.0 technologies on librarian profession and on library services. Emerging technologies calls for new roles and new skills for library professionals, traditional librarianship will become out dated Sharma (2011).

Tzoc & Millard (2011) analyzed data from job announcements in 5 websites and technical courses in LIS schools and found that 46 percent of positions preferred a bachelor's degree in computer science, information management or a related field. This may be a confirmation of the ongoing need to recruit new librarians with those types of degrees.

Satpathy and Maharana (2011) did a study on ICT skills of LIS professionals working in Engineering Colleges in Odisha. Key technical areas for which skills are analyzed are computer operating systems and programming languages, library automation, web design and web based services, digital library and institutional repository.

Arokyamary and Ramasesh (2012) accentuated the impact of ICT and web technologies on libraries, user and LIS professionals. Required ICT skills are presented. The authors are opined that library professionals with up-graded technical skills can elevate the value of libraries in society. The border line between the roles of professionals and paraprofessionals has become blurred, they differs only in library administration and external factors concluded by Zhu (2012).

Kattimani and Naik (2013) suggested engineering libraries to recruit technically skilled staff or train available staff in technical skills, while concluding that adopting ICT technologies are mandatory for engineering college libraries after analyzing the professional and ICT skills of library

professionals working in Engineering colleges libraries affiliated to VTU university in Karnataka.

Kumar (2013) studied ICT skills of engineering college library professionals in Rayalaseema area of Andhra Pradesh. The technical skills analyzed are operating systems, use of application software packages, programming languages, managerial skills and other ICT related activities. The study found that most of the library professionals studied have sufficient ICT skills but still there is a scope to improve their skills.

Sahu (2013) did survey on skills, competencies and current practices required for present time library professionals of Engineering Colleges in Odisha, important technical skills required as per the study are library automation, knowledge on digital library, web surfing, web design, markup languages, digital archiving and preservation, and Networking and hardware.

Radniecki (2013) examines the roles and responsibilities of emerging technologies librarians using ALA, s JobLIST database. Trend-spotting & implementation, reference activities, social media/Web 2.0/outreach, programming, and instruction are top skills required emerging technologies librarians.

Raju (2014) reports on the preliminary study, a part of larger study carried out to frame complete skill statement of academic library professionals of South Africa in digital era. Content analysis of job advertisements and interviews were conducted for this study to find out key skills and competencies requirement. Impact of technology on libraries and need to proactively update technical skills of library professionals are well articulated by Hayman & Smith (2015) "Since our libraries and institutions are continually called upon to stay abreast of technological change of all kinds, practitioners need to be information-savvy innovators who also view trends with a critical eye".

Maceli and Burke (2016) presents about a survey of technologies already using and technical skills LIS professionals prefer to learn. Clarco (2016) presents finding of the joint task force formed by Association of Research Libraries (ARL), the Canadian Association of Research Libraries (CARL), the Association of European Research Libraries (LIBER), and the Confederation of Open Access Repositories (COAR) on library professionals competencies for e-research and scholarly communication, Open Access, digital curation and preservation and support for digital scholarship.

### III. NEED AND PURPOSE OF THE STUDY

As technological advances vibrantly altered library system, library administrators and service providers should play dynamic roles with efficiency to catch up with volatile technologies and technology influenced library patrons. Extensive studies on skills and competencies required for library professionals to survive in fast changing

environments are very much required to act as guides for library professionals. To help library professionals many professional bodies in foreign countries prepared competency matrices, but unfortunately such matrices are not developed for Indian context. Very few research studies are done on skills requirement for technology management.

Karnataka being a fast developing state in India and hub of information technology; is a home for many prominent engineering and technical institutions. The state is having 21 autonomous engineering colleges which are globally benchmarked, academically advanced, and infra-structurally well versed. These institutions are imparting world class education supplying competent work force to the world. Analyzing the competencies of LIS professionals working in these institutions will bring out valuable results, which will act as a guide and provocative document for library professionals to develop their efficiencies.

#### IV. OBJECTIVES OF THE STUDY

1. To identify Important emerging technologies applicable for engineering libraries at present.
2. To identify the set skills required for library professionals to handle identified emerging technologies.
3. To analyze the level of emerging technologies skills possessed by library professionals of Autonomous Engineering College Libraries in Karnataka.
4. To compare level of skills among different Designations of library professionals
5. To draw recommendations for improving emerging technologies skills of library professionals.

#### V. RESEARCH METHODOLOGY

Emerging technologies applicable for libraries in the Indian context, and skills and competencies required for handling those technologies are determined based on literature review, and discussion with librarians and experts in the field of library and information science. Data collection tools include structured questionnaire, personal observation and discussion of researcher with library professionals. Major part of the data is collected through structured questionnaire. Totally 200 questionnaire were distributed among library professionals working in 21 autonomous engineering college libraries, out of which 185 filled in questionnaire were received. Sample size is 92.5%. All staff members having library science qualification, designated as librarian, Assistant librarian, and library assistant are considered as library professionals and included under sample.

#### VI. DATA ANALYSIS AND DISCUSSIONS

Distribution of staff as per designation and qualification has been analyzed to understand the structure and pattern of staffing. Skills of total respondents in individual technologies as well as overall emerging technologies are analyzed. Comparative analyses of skills among different

designations are done. Recommendations for improving emerging technology skills are drawn. Percentage analysis, mean, and average mean techniques are used to analyze data.

##### A. Staff Details

##### 1. Distribution of staff based on Designation

TABLE I DISTRIBUTION OF STAFF BASED ON DESIGNATION

Designation	Number of Staff	Percentage %
Librarian	21	11.35%
Assistant Librarian	76	41.08%
Library Assistant	88	47.56%
Total	185	

Highest proportion of staff is library assistants 47.56% followed by Assistant Librarians 41.08% and the least proportion are librarians 11.35%.

##### 2. Distribution of staff based on Qualification

TABLE II DISTRIBUTION OF STAFF BASED ON QUALIFICATION

Qualification	Number of Staff	Percentage %
PhD	10	5.4%
Pursuing PhD	8	4.32%
MLISC+ Phil	18	9.72%
MLISC+ other master degrees	15	8.1%
MLISC	90	48.64%
BLISC.	21	11.35%
DLISC.	23	12.43%
Total	185	

Majority of the staff are having Masters in Library science (MLISC.) 48.64 %, PhD. holders even though 5.4% only considerably good proportion are having prestigious degree, 4.32% are pursuing PhD and 8.1% are having additional master degrees in other subjects than library science. Overall status of educational qualification of staff is good.

##### 3. Distribution of staff based on Experience

TABLE III DISTRIBUTION OF STAFF BASED ON EXPERIENCE

Experience Range in Years	Number of Staff	Percentage %
1 to 5	28	15.13%
6 to 10	55	29.72%
11 to 15	37	20%
16-20	39	21.08%
21-25	14	7.56%
26-30	6	3.24%
31-35	6	3.24%
Total	185	

Highest proportions of staff are in the range of 6 to 10 years experience (29.72%), followed by 16-20 years (21.08), and the third largest proportion is 11 to 15 years (20%). Staff having more than 25 years experience are 6.48%, and very less proportion of staff are having more than 30 years of experience (3.24%).

### B. Emerging technologies skills of library professionals

#### 1. Knowledge and Skills in Cloud Computing

TABLE IV KNOWLEDGE AND SKILLS IN CLOUD COMPUTING

Skills	Mean	Rank
Knowledge on cloud computing concepts and technology	3.53	1
Knowledge on cloud computing products and services -Ex Libris4, Polaris Library Systems8, Dura Cloud2 etc	3.3	3
Skills in using free cloud services	3.44	2
Average Mean	3.42	

Knowledge on cloud computing technology and concepts is the top rated skill with the mean 3.53, whereas Knowledge on cloud computing products and services is the least known skill with the mean 3.3. Over all mean of cloud computing skills is 3.42 which are slightly higher than the median which denotes better skills, but still there is a room for improvement.

#### 2. Knowledge and Skills in Mobile technologies

TABLE V KNOWLEDGE AND SKILLS IN MOBILE TECHNOLOGIES

Skills	Mean	Rank
Trans-coding library applications to mobile devices	2.85	3
Designing & Handling mobile library app	2.92	4
Customizing mobile library website	3.12	2
Knowledge on mobile networking technologies	3.45	1
Average mean	3.08	

Knowledge on mobile networking technologies is the top rated skill with mean of 3.45, followed by customizing mobile library website with mean of 3.12 levels of both the skills are above median which shows better skills. But skills on 'Trans-coding library applications to mobile devices' and 'Designing & Handling mobile library app' are low whose means are below the median. Overall skills on Mobile technologies are appreciable with the mean of 3.08 but needs to improve.

#### 3. Knowledge and Skills in Web 2.0 Technologies

'Managing library whatsapp group' is the top rated skill with mean of 3.23, followed by 'Managing library facebook/twitter or any other social media page' with mean of 3.22. level of all web 2.0 skills are above median which shows better skills, except 'Instant messaging using RSS feeds' which needs to be improved which is helpful for delivering quick alerting services to users. Overall skills on

Web 2.0 Technologies are appreciable with the mean of 3.08 but needs to improve to provide user friendly services.

TABLE VI KNOWLEDGE AND SKILLS IN WEB 2.0 TECHNOLOGIES

Skills	Mean	Rank
Developing library Wiki	3.15	3
Managing library blog	3.11	4
Instant messaging using RSS feeds	2.75	7
Managing library facebook/ twitter or any other social media page	3.22	2
Managing library whatsapp group	3.23	1
Web conferencing skills	3.04	6
Chatting services like Skype	3.07	5
Average mean	3.08	

#### 4. Knowledge and Skills in Web 3.0 Technologies

TABLE.VII KNOWLEDGE AND SKILLS IN WEB 3.0 TECHNOLOGIES

Skills	Knowledge on semantic web technology
Excellent (%)	9 (4.86%)
Good (%)	62 (33.51%)
Moderate (%)	45 (24.32%)
Poor (%)	46 (24.86%)
Very poor (%)	23 (12.43%)
Mean	2.93

Web 3.0 skills are lower with the mean 2.93. Library 3.0 is gaining momentum in recent times and having high potential to catch up with user expectations in the world of artificial intelligence induced semantic web.

#### 5. Analysis of overall emerging Technologies skills

TABLE VIII ANALYSIS OF OVERALL EMERGING TECHNOLOGIES SKILLS

Skills	Mean	Rank
Knowledge and Skills in Cloud Computing	3.42	1
Knowledge and Skills in Mobile technologies	3.08	2
Knowledge and Skills in Web 2.0 Technologies	3.08	2
Knowledge and Skills in Web 3.0 Technologies	2.93	3
Average Mean	3.12	

Skills on 'cloud computing technology' are highest followed by Skills in 'Mobile technologies' and Skills in 'Web 2.0 Technologies'. Skills in 'Web 3.0 Technologies' are least. Overall skills on emerging technologies are appreciable with the mean of 3.12 but nearer to middle tendency which indicates requirement of improvement in skills to attain good and excellence status.

### C. Comparative Analysis of Emerging technology Skills Among Different Designations of Library Professionals

#### 1. Knowledge and Skills in Cloud Computing

TABLE IX KNOWLEDGE AND SKILLS IN CLOUD COMPUTING

Skills	Librarian Mean (Rank)	Assistant Librarian Mean (Rank))	Library Assistant Mean (Rank))
Knowledge on cloud computing concepts and technology	3.85 (1)	3.67 (2)	3.34 (3)
Knowledge on cloud computing products and services -Ex Libris4 , Polaris Library Systems8, Dura Cloud2 etc	3.52 (1)	3.17 (2)	3.14 (3)
Skills in using free cloud services	3.57 (1)	3.57 (1)	3.3 (2)
Average Mean	3.64 (1)	3.47 (2)	3.26 (3)

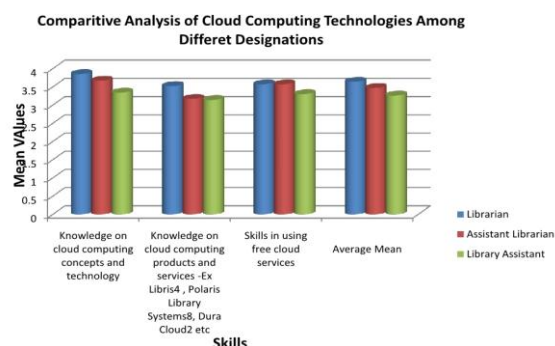


Fig. 1 Knowledge and Skills in Cloud Computing.

In all individual skills and overall skills of cloud computing, librarians are having highest level of skills with average mean of 3.64, assistant librarians are having second highest level of skills with average mean of 3.47, library assistants are having least skills with average mean of 3.26. Average mean of skills in all three designations are above the median which indicates all library professionals under the scope of the study are having good level of skills.

## 2. Knowledge and Skills in Mobile Technology

TABLE X KNOWLEDGE AND SKILLS IN MOBILE TECHNOLOGY

Skills	Librarian Mean (Rank)	Assistant Librarian Mean (Rank))	Library Assistant Mean (Rank))
Trans-coding library applications to mobile devices	3.33 (1)	3 (2)	2.78 (3)
Designing & Handling mobile library app	3.47 (1)	2.93 (2)	2.77 (3)
Customizing mobile library website	3.71 (1)	3.22 (2)	2.9 (3)
Knowledge on mobile networking technologies	3.61 (1)	3.57 (2)	3.29 (3)
Average Mean	3.53 (1)	3.18 (2)	2.93 (3)

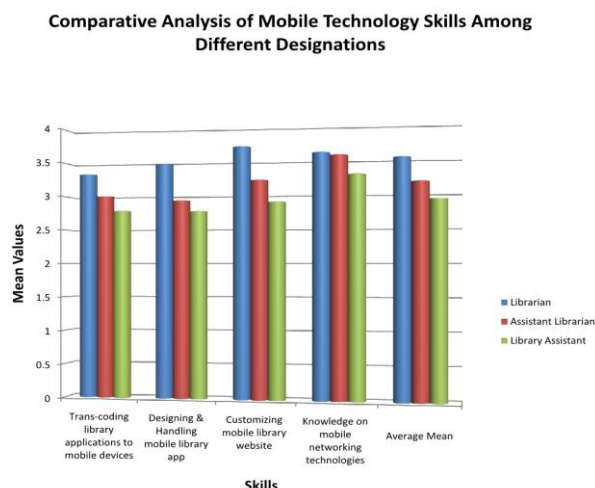


Fig. 2 Knowledge and Skills in Mobile Technology

average mean of 3.53, assistant librarians are having second highest level of skills with average mean of 3.18, library assistants are having least skills with average mean of 2.93. Average mean of skills of Librarian and assistant librarian are above the median which indicates good level of skills, but the Average mean of skills of library assistants are below the median which indicates lower level of skills.

## 3. Knowledge and Skills in Web 2.0 Technologies

In all individual skills and overall skills of mobile technology, librarians are having highest level of skills with average mean of 3.7, assistant librarians are having second highest level of skills with average mean of 3.14, library assistants are having least skills with average mean of 2.89. Average mean of skills of Librarian and assistant librarian are above the median which indicates good level of skills, but the Average mean of skills of library assistants are below the median which indicates lower level of skills.

In all individual skills and overall skills of mobile technology, librarians are having highest level of skills with

TABLE XI KNOWLEDGE AND SKILLS IN WEB 2.0 TECHNOLOGIES

Skills	Librarian Mean (Rank)	Assistant Librarian Mean (Rank))	Library Assistant Mean (Rank))
Developing library Wiki	3.61 (1)	3.23 (2)	2.94 (3)
Managing library blog	3.76 (1)	3.14 (2)	2.95 (3)
Instant messaging using RSS feeds	3.57 (1)	2.86 (2)	2.57 (3)
Managing library facebook/ twitter or any other social media page	3.76 (1)	3.28 (2)	3.04 (3)
Managing library whatsapp group	3.66 (1)	3.26 (2)	3.13 (3)
Web conferencing skills	3.8 (1)	3.02 (2)	2.87 (3)
Chatting services like Skype	3.8 (1)	3.19	2.79 (3)
Average Mean	3.7 (1)	3.14 (2)	2.89 (3)

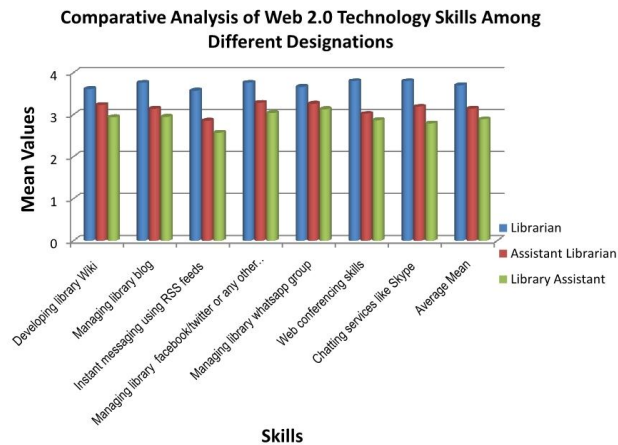


Fig. 3 Knowledge and Skills in Web 2.0 Technologies

#### 4. Knowledge and Skills in Web 3.0 Technologies

TABLE XII KNOWLEDGE AND SKILLS IN WEB 3.0 TECHNOLOGIES

Skills	Librarian Mean (Rank)	Assistant Librarian Mean (Rank))	Library Assistant Mean (Rank))
Knowledge on semantic web technology	3.52 (1)	3.05 (2)	2.69 (3)

Librarians are having highest level of Knowledge on semantic web technology with the mean of 3.52, assistant librarians are having second highest level of skills with the mean of 3.05, library assistants are having least skills with the mean of 2.69. The mean of skills of Librarian and assistant librarian are above the median which indicates

good level of skills, but the mean of skills of library assistants are below the median which indicates lower level of skills.

#### D. Recommendation for Improving Emerging Technology Skills

TABLE XIII RECOMMENDATION FOR IMPROVING EMERGING TECHNOLOGY SKILLS

Recommendations	Number of Staff Accepted	Percentage of Staff Accepted	Rank
Revision of syllabus by universities as per trends	128	69.18%	5
Arranging in-house training sessions	114	61.62%	6
Deputing staff to external training programs	139	75.13%	4
Initiatives by statutory bodies like AICTE, UGC to arrange training programs	140	75.67%	2
Motivation by higher authorities to learn new skills	138	74.59%	3
Self motivation and efforts	146	78.91%	1



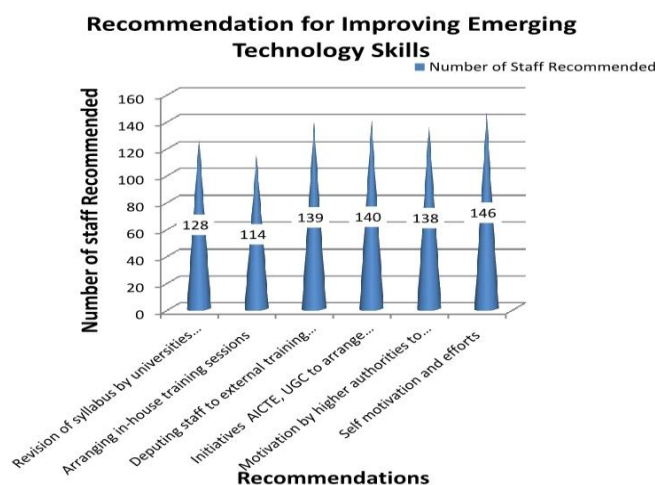


Fig. 4 Recommendation for Improving Emerging Technology Skills

‘Self motivations and efforts’ is the highest recommended point with 78.91%, followed by ‘Initiatives by statutory bodies like AICTE, UGC to arrange training programs’ with 75.67%. ‘Motivation by higher authorities to learn new skills’ is the third recommendation with 74.59%, followed by ‘Deputing staff to external training programs’ at the fourth place with 75.13%. ‘Revision of syllabus by universities as per trends’ and ‘Arranging in-house training sessions’ are on lower side of recommendations, even then they also received good opinion rating of 69.18% & 61.62% respectively.

## VII. FINDINGS AND RECOMMENDATIONS

1. Highest number of staff is designated as library assistants.
2. Majority of the staff are having Masters in Library science (Miss.). Overall status of educational qualification of staff is good.
3. Majority of the staff are having experience in the range of 6 to 20 years, which indicates available staff will continue in their services for longer periods. It is a potential for libraries. Developing technical skills by motivating and helping staff to improve their educational and technical abilities will be helpful for libraries in implementing new technologies and services.
4. Overall Emerging technologies skills of library professionals are good, except in ‘Web 3.0’ technology. But still needs to develop their technical abilities to improve quality of technology enabled tasks and services.
5. In individual as well as overall emerging technologies skills librarians are having highest rate of skills, assistant librarians having second highest rate of skills, and library assistants are having least skills comparatively.
6. Results indicate that staffs own interest and efforts is very essential for developing technical skills. Statutory bodies like AICTE, UGC have to take initiatives to arrange training programs for up-liftment of technical

skills of library staff. Higher authorities of library and institutions should be committed to develop their staff skills by motivating them, deputing them to training programs, arranging internal training. Universities should also revise LIS curriculum keeping in mind present and future developments in library field.

## VIII. CONCLUSION

Present volatile technology world is threshold for numerous technologies, intensely influencing libraries and their users. It is not an exaggeration to say basic framework of library system is altered by technologies. Modified library system and tech-cultured users prompted library professionals to upgrade their skills and competencies and become bridge between new library resources, services and users. It is concluded from the study that library professionals working in autonomous engineering college in Karnataka are having better skills to handle emerging technologies, they are also well off in terms of educational qualification. Library staff should be proactive in learning new skills to handle technologies emerging from time to time. Libraries have to make use of their workforce by motivating and preparing them to handle present and future technologies.

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