7.1 Introduction

The aim of this study is to evaluate the information and communication technology (ICT) competence, management competencies and training need analysis of library and information professionals working in the engineering college libraries. Information and communication technology plays a vital role in all aspects of nation’s development, to develop every systems, organizations, institutions, depends upon the advanced technological applications. In 21\textsuperscript{st} century, libraries have emerged as a knowledge storehouse instead of traditional libraries like dumping resources in vast area. Due to advanced development in digital technology, libraries also emerged as digital library, virtual library etc. Every system, to work effectively, needs qualified, competitive, expert and experienced staff community. Especially in the libraries, there is a huge demand for competitive professionals to serve user community effectively and efficiently. Here the system is referred as engineering college libraries. The engineering college libraries will work effectively, if their respective staff is properly qualifies trained, expert and experience in their field and competitive in their work. The evaluation of skills, competences, knowledge, abilities, expertise, characteristics etc., of library professionals proved to be useful in assessing the work efficiency, expertise, competitiveness and experience.

Engineering colleges are providing higher education in technical courses to impart effective and useful education; these colleges ought to adopt modern technological applications particularly to their libraries. Libraries are the heart of any educational institution. Information and communication technology (ICT) is developing the present libraries. Some of these ICT applications are library
automation, e-learning technology (e-Vidya NPTEL programmes) digital storage and database management, internet and intranet, e-resources developments, digital libraries, institutional repositories, library portals, e-mail alert services, list serves, SMS services, online information retrieval and communication technologies etc., these developments in the libraries converted to traditional libraries into modern libraries. Now almost all engineering college libraries are hybrid and mixed libraries, which include semi automation, and both printed and as well as digital form of literatures. Further to manage such technology, there is needed to recruit engineering college library professionals who are experts in management such modern technological applications.

Now a day’s library professional have huge opportunity to get training in various workshops, staff development programmes (SDP), orientation courses, refresher courses, information literacy training programmes, conferences, seminars, symposiums, forum discussions, group discussions, hands on trainings, short term courses state level, national level as well as international level on advanced technological applications in library general and theoretical in nature. Especially TEQIP-IIi (technical education quality improvement programme phase-ii) providing staff development programmes for faculty as well library professionals in technical institutions in india. Nevertheless, to learn technological applications, the practical training is needed along with classroom teaching. The training program resource people know the needs of the trainee library professionals. Under these circumstances, the evaluation and assessment of the competences and skills of the library professionals is needed. Therefore, the library expert only knows the competence is
excellent, good or poor. To understand all these and to impart such competence, a specialized training programme is needed to design.

However, there is much to be completed still to see to it in competences of library professionals. the study investigates and is proved to be useful in evaluating the present skills and competences of library and information professionals working in Engineering college libraries in Karnataka State, based on the findings of present study recommendations have been made and it is also attempted to know the training needs of the library professionals.

7.2 Major Findings of the Study

Based on the collected primary data and opinion of the library professionals working in the engineering college libraries in Karnataka state some of the major findings are drawn.

1. 170 (88.54%) Engineering colleges are managed by the private managements in Karnataka State (Table 3.3)

2. Very less number of engineering colleges are established in Gulbarga 18 (9.38%) and Belgaum 26 (13.54%), compared to Bangalore 100 (52.08%) and Mysore 48(25.00%) Regions (Table 3.3)

3. Responses received from 128 (34%) librarians, 5 (1.34%) deputy librarians and 240 (64.34%) assistant librarians (Table 6.1.1)

4. All the libraries are not having collection of non print materials like, e-books, Audio-visual materials and Compact Disks (CD’s) or having small collection of these materials.(Table 5.11)
5. The majority 115 (89.84%) of library buildings are situated at administration block, office block, and somewhere in the corner of the colleges (Table 5.12)

6. All the engineering college libraries are not fully computerized; except 25.8% are Fully Computerized and 32.03% are partially computerized. (Table 5.17)

7. Majority of the engineering college libraries are providing different kinds of services. But not providing such Selective Dissemination of Information (SDI), Current Awareness Services (CAS), Bibliographical & Database Search services, Internet related services, Reprographic services, Union Catalogue or Periodicals, Indexing, Abstracting and Translation services, Technical consultancy Services and other innovative services. (Table 5.33)

8. All the engineering college libraries are having Computer systems, but the majority of libraries are having below 10 Computer systems. (Table 5.18)

9. Barcode scanners and Paper scanners are essential for engineering college libraries, but only 64 (50.00%) libraries are have these facilities. (Table 5.19)

10. 108 (84.37%) engineering college libraries have not developed Institutional repositories (IR), it is essential to develop and initiate the Institutional Repositories in all engineering college libraries. (Table 5.25)

11. Most of the Engineering College libraries have not subscribed the journals in electronic format. Searching and accessing information through electronic journals is easy compared to print journals. (Table 5.32)

12. The engineering college professionals have lowest competences in Independent Decision Making (1.57) (Figure 6.1)

13. Less than twelve percentage of library professionals covered under the study have the presentation competences. But teaching and employment and career guidance competences are known to less than seven percentages of the professionals (Table 6.3.7)
14. Only 141 (37.80%) of the professionals are covered under study providing information literacy programmes (Table 6.3.10)

15. Majority of the professionals have knowledge about only Windows operating systems. Compared to all professionals Librarians (1.67) have more skills than other library professionals (Table 6.4.1)

16. Regarding the internet related applications and competences of the library professionals are known to less number of the library professionals( Table 6.4.3)

17. Technical skills like Hardware setup, software knowledge, install software’s; Checkup Existing systems etc., have very low level expertise knowledge or not known about these skills (Table 6.4.4).

18. The study found that 329 (88.20%) of the library professionals not known by LMS software like Libsys (Table 6.4.5)

19. Regarding the competence in library automation software’s modules 344 (92.23%) professionals not aware about budgeting modules and more than 50% of the library professionals have very low level expertise knowledge about book acquisition modules, serials module and technical processing and bar coding modules (Table 6.4.8)

20. All most all library professionals do not have competent in library electronic tools which are available in electronic formats such as ELECTRONIC DDC, CLASSIFICATION+ and LCSH (Library of Congress Subject Headings) (Table 6.4.9)

21. Majority of the library professionals (on an average 122 (95.31%) do not know the digitization process. (Table 6.4.10)

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22. The most common use of web servers is to host websites, such servers are TOMCAT, MS IIS etc., the library professionals do not have competent in knowledge of Web servers (Table 6.4.11)

23. Only a few library professionals have the knowledge about Web design/Web editor using Front Page, Dreamweaver and HTML programming (Table 6.4.12)

24. Majority of the library professionals (99.00%) do not know about MYSQL, ORACLE and SQL SERVER server softwares (Table 6.4.13)

25. Majority of the professionals are not know about the e-learning technologies. (Table 6.4.14)

26. The study noted that majority of the library professionals (on an average 98.00%) do not have any competence about Standard Compliant (Table 6.4.16)

27. Majority of the library professionals don’t have any competence about WINISIS and WEBISIS software’s, only few of the professionals know CDS/ISIS for windows (Table 6.4.18)

28. Only few 10.72% Library professionals have competence in the RFID (Radio-frequency identification) Technology and implementation (Table 6.4.20)

29. Only 27.08% of the library professionals have competence about digital and virtual libraries (Table 6.4.21)

30. 322 (86.33%) of the library professionals are not have competence in the Electronic document delivery (Table 6.4.23)

31. The study revealed that knowledge in e-books of library professionals had similar competence.(Table 6.4.24)

32. Majority of the library professionals have similar skills and competence in WEB OPAC.(Table 6.4.26)
33. Providing e-Alert service to users and accessing of the database this is known to ¾ of the library professionals. Only a few library professionals have the knowledge of set IP address and user name and password for accessing. (Table 6.4.27)

34. The ICT competencies of library professional are very low as mean calculated on various ICT skills and competencies (Figure 6.2).

35. Among all the library professionals, Deputy Librarians (1.55) have more competence compared to librarians (1.44) and assistant librarians (1.22) (Table 6.4.28).

36. Only 29.22% of the professionals have attended professional related workshops. (Table 6.5.3)

37. No library professionals have attended any short-term courses. (Table 6.5.4)

38. Conferences, Seminars, Symposia and conventions are popular training programmes, which bring about the latest developments in the profession. As evaluated by the library professionals only 21.72% have attended these programmes (Table 6.5.5)

39. Majority of the managements have not encouraged the library professionals to depute training programmes. It noted that only 11.53% professionals are encouraged to attend the programmes (Table 6.5.7)

40. Only 35.92% of the library professionals covered under the study having membership of various International, National and state level professional associations. (Table 5.5.8)

41. Only 17 (70.83%) librarians, 4 (16.67%) deputy librarians and 3 (12.50%) assistant librarians have published research articles. (Table 6.5.10)
42. Paper presentation attitude of library professionals is very less. Only 57 (15.28\%) of library professionals have presented papers in conference, seminars etc., (Table 6.5.11)

43. Only 23 (6.17\%) Library professionals have participated as resource person for special lecture. However, No assistant librarians has participated as resource person (Table 6.5.12)

44. Nearly 325 (87.13\%) of the library professionals demanded specialized training programmes (Table 6.5.13)

45. Only 133 (35.66\%) of library professionals acquire ICT skills through formal education. (Table 6.6.1)

46. 73 (19.57\%) acquired the ICT skills through informal education. (Table 6.6.2)

47. 284 (76.14\%) professionals have faced financial problems in acquiring ICT skills (Table 6.7.1)

48. 265 (71.05\%) professionals have constraints to acquire ICT skill due to overload of work.(Table 6.7.2)

49. 288 (77.21\%) experienced the negative attitude of higher authority to acquire ICT skills (Table 6.7.4)

50. Lack of professional recognition by 291 (78.02\%) is also the constraints to acquire ICT skills of professionals (Table 6.7.5)

51. 307 (82.31\%) professionals have felt the lack of sufficient staff in the library to acquire ICT skills (Table 6.7.7)
7.3 Suggestions

Based on the findings some of the suggestions and recommendations are made.

1. The eminence of Engineering Colleges in state has good number of colleges which are established. From the administrative point of view is divided into four regions such Bangalore, Mysore, Belgaum and Gulbarga Regions, but very less number of engineering colleges are established in Gulbarga, Belgaum and rural areas. Hence, it is recommended to establish more number of engineering colleges in these regions.

2. Less number of qualified library professionals is working in the engineering college libraries compared to vast number of user community, so it is recommended to recruit qualified professional library staff to provide accurate and proper services to the user community.

3. Recommended to develop more collections in Bound volumes, Standards/Code Books and Project reports as these resources are carried out important valuable information.

4. It is suggested that the Engineering college libraries should acquire various non-book materials for which some percentage must be set aside in the budgetary provision may be about 60 per cent and start building up the collection of non-book materials. It is recommended that the special grants be the requisition in the initial stage to development for the equipment required to use to have access to the mediated information contained in non-book materials.

5. The library professionals must convince the authority of engineering colleges to come forward to construct independent functional buildings for majority of the library, which are housed at present in an Administration Block, Office Block, and somewhere in the corner of the colleges.
6. Due to the information and communication technological developments, it is essential that the engineering college libraries computerize all the operations and activities of the libraries and it is strongly recommended.

7. ICT based services are not provided, this is because of lack infrastructure and properly experienced library staff. Hence, it is needed to train the library staff members and also increase the technological infrastructure of the library.

8. When compared to user community, there is a shortage of computer systems in the library. Hence, it is affecting in providing computer related services to the users. Hence, it is needed to increase in the number of computer systems in the library.

9. It is strongly recommended to train more library professionals in digital library software training programmes and provide scanning and uploading facilities in the engineering college libraries.

10. It is essential to provide internet facilities in the libraries, hence it is recommended to provide internet facilities in the all engineering college libraries in Karnataka state.

11. Librarianship profession needs more publicity like other professionals courses and it is recommended to introduce at pre university level.

12. It is recommended to organize the more short-term courses, to encourage professionals to attend more workshops at least twice in a year.

13. It is suggested to organize centralized training programme for e-learning technologies in engineering college libraries.

14. It is suggested to conduct more short-term course to improve the knowledge about the electronic publications, publishers and electronic/digital libraries and it is very essential to organize the Centralized Refresher courses to all the library professionals working in the engineering college libraries by the competent authority.
7.4 Further Areas of Research

The present research was carried out for the Evaluation of Library professional’s skills and competences in Information and Communication Technology (ICT), Managerial Competences, Librarianship, Information Standards skills, Training and Development and Means and methods of Acquiring skills of Library and information professionals working in the Engineering college libraries in Karnataka state. Based on the observations and findings of the study, it is noted that a few studies concerned with following areas may also be undertaken.

1. Training needs analysis of Library and information professionals working in the engineering college libraries in Karnataka state

2. Design and development of e-learning activities in the engineering colleges in Karnataka state

3. Implementation of ICT activities in libraries of engineering colleges in Karnataka state

4. Management, Collection Development of e-resources and Institutional Repositories in engineering college libraries of Karnataka state

5. Design and develop short terms courses, refresher courses for library professionals working in the engineering college libraries in Karnataka state.

7.5 Conclusion

An Engineering college library is hailed as ‘Technological University’ built on the strong edifice of Technical principles. Thus, an engineering college library is a technical institution serving its community without showing any kind of disparity among its clientele.

The need of the hour is that the Engineering college library has to out reach a clientele in the information age. The present age is considered as information age. The
knowledge and information needs of the present clientele cannot satisfactorily and
effectively meet through books and periodicals alone. A lot of information in this
computer age is produced and presented in other than the conventional forms. Thus,
the non-conventional rather non-book materials do contain a considerable quantity of
knowledge and information. To do so, the well-equipped library must have access to
the mediated information contained in non-book materials, retrospective and latest
literature on technical, other related sciences, advanced ICT infrastructure and well-
tained, skilled, qualified, and competitive library professionals. Every library
professional role working in the engineering college libraries in Karnataka state is
very important in managing and developing the library.

As an observation is made the engineering college libraries are having less
number of library professionals at higher level. Majority of the library professionals
are Library Assistants and most of the others working in the engineering colleges are
semi-professionals. Thus it is suggested to recruit professionally qualified library
assistants. Majority of the higher level library professionals must be given a
specialized training at least in two years.

In Karnataka state, there are many Universities, Colleges, Medical, Engineering, Research and Development Centres which are conducting training programmes, refresher courses, Faculty Development Programmes (FDP) for their staff. Less number of universities, colleges are conducting training programmes for library professionals, but most of these are general in nature. So it is suggested to come forward for Visvesvaraya Technological University (VTU) Belgaum to take initiation to organize advanced training programmes, refresher courses, managerial competencies, especially for library professionals working in the engineering college libraries.

It is observed that majority of the library professionals have not become
members of International bodies, i.e. IFLA, ALA. National level bodies like
ILA,IASLIC, IATLIS professional bodies should create motivation to engineering
college library professionals to become members of the bodies. To do so, they should
cconduct or organize regional level training programmeS, workshops, hands on
training in new applications, but whereas most of the library professionals are
becoming Regional Professional bodies like KALA (Karnataka State Library Association), AKELPA (All Karnataka Engineering Library Professional Association) members. These associations are organizing conference, seminar, lectures, technical talk etc. So it is suggested to organize more on training in advanced ICT application to Library professionals working in the engineering college libraries in Karnataka state.