ABSTRACT
EVALUATION OF DIGITAL REFERENCE SERVICES IN ENGINEERING COLLEGE LIBRARIES AFFILIATED TO UNIVERSITY OF PUNE

Library is the heart of every academic institution. It occupies central and important place in the frame of academic system. It is not only storehouse of books, but also considered as treasury of knowledge and dynamic tool of education. The primary role of library is to fulfil the aim of academic institution as well as to advance its aims and objectives. It is important place for study and research. The total functioning of library has been changed. Many libraries are fully computerised and connected with the world by means of internet.

Every field, including libraries, is facing challenges by the rapid growing new information and communication technologies (ICT) like computer, internet, telecommunication, multimedia, world wide web, digitization, virtual technologies, etc. The 21st century is marked by the advent of ICT, including internet and multimedia. Multimedia is one such visual aid which plays important role in teaching and learning. Internet is a world wide network of computer networks that contains a vast collection of information and resources. It forms greatest source of information accessible anywhere. Information and Communication Technology (ICT) has improved availability, accessibility and timeliness. In traditional libraries inputs were given first and users access and then use it. But this scenario is changed where input can be added and accessed simultaneously. New models like e-library, digital library, digital reference, wiki, blogs, web 2.0, and lib 2.0, instant messaging, web opac, links to websites and ask services are popular and familiar.

Many terms are used to describe the study of digital reference such as virtual reference, real time reference, chat reference and live reference. All share a central concept; the use of software and the internet to facilitate human intermediation at a distance. Digital reference services began in the mid of 1980s but have developed rapidly in recent years. Digital reference provides more alternatives and flexibility to users, especially those operating within a virtual learning environment.

Also known as virtual reference service, digital reference service (DRS) is “reference service initiated electronically, often in real-time, where patrons employ computers or other internet technology to communicate with reference staff, without

Savitribai Phule Pune University (formerly University of Pune) is one of the premier universities in India, is positioned in the North-western part of Pune city. It occupies an area of about 411 acres. It was established on 10th February, 1949 under the Poona University Act. The university houses 46 academic departments. It is popularly known as the 'Oxford of the East'. It has about 307 recognized research institutes and 612 affiliated colleges offering graduate and post-graduate courses. There are 114 engineering colleges affiliated to university of Pune, providing education in engineering at graduate and post graduate level. It covers three districts namely Pune, Ahmednagar, Nasik. The present study aims at understanding issues related to digital reference services in engineering college libraries affiliated to University of Pune.

For the present study, a systematic review of the literature on the digital reference service and related concepts has been conducted. A keyword search under digital reference services has been done in Google, Google scholar search engines and also is searched on shodhganga and shodhgangotri websites for the related topic. For the purpose of literature review various works like digital reference service by Buckland, Chandwani, Dollah, IFLA digital reference guidelines, virtual reference service by Beaton, Bullard, Gibson, Maharana, Online reference service by Eke Helen, Web 2.0 by Chua, library and Information Services in e- environment by Owen, Vatnol, Walters, Institutional Repositories by Enabling Open Scholarship (EOS), Subject Gateways and Search Engines by Heron, Poonkothai, Digital Library by Chowdhury, Han, Web Based Library Services by Bhatnagar, Borasky, Chinta, Contreras, Electronic Document Delivery by Kinslow, and Question Point by Qobose, etc. are studied.

The present study has following objectives:

a) To investigate and identify the current level of digital reference services in engineering college libraries affiliated to University of Pune, Pune.

b) To identify strength and weakness of existing digital reference services of libraries under study.

c) To examine use, need, expectations of users of digital reference services in libraries under study.
d) To measure cost and benefits of digital reference services with reference to human resource, budget, technology and user education.
e) To suggest possible solutions for gaps if any in digital reference services and suggest priorities for continuous improvement.

The present study is based on following hypotheses.

i. Library users are satisfied with the digital reference services provided by the college libraries.

ii. Providing digital reference services are expensive in terms of finance.

iii. Digital reference services are not used at high extent by users of engineering college libraries.

The principal significance of this research is to create new knowledge along with other significances such as to find current status of digital reference service, level of quality, user satisfaction level, feedback and suggestions of users, problems faced by library professionals in implementation. There is less research on this subject in India also. It is necessary to study the digital reference services in engineering colleges because these colleges are creating Engineers which build the nation in many ways.

Present study is descriptive, basic, evaluative and qualitative research. While preliminary survey of websites of engineering college libraries under study, observation technique is used for checking availability of digital reference services. Whenever possible, interview technique is also utilized for recording response. A detailed; structured questionnaire for librarians and users is designed and distributed among respondents in engineering college libraries under study. Questionnaire is designed by keeping focus on aims and objectives of this study. Researcher had prepared mixed questionnaire to avail benefits of both the types of questionnaires. Most of the questions are close ended, few are open ended. Mixed questionnaire helps to get qualitative as well as quantitative data. Before mailing questionnaires to respondents, a pilot survey has been taken. Thus researcher has taken all care to construct appropriate questionnaire, which helps in getting accurate and adequate data for fulfilling aims and objectives of the study.

The researcher has used both primary and secondary data for this study. Primary data are collected by using questionnaire technique. While preliminary survey of websites of engineering college libraries under study, observation technique is used
for checking availability of digital reference services. Whenever possible, interview technique is also utilized for recording response. While secondary data is collected from published books, journals, library literature, reports, thesis, dissertations; conference/seminar proceedings and database from internet etc.

In present study 114 engineering college libraries affiliated to University of Pune is the population. A list of engineering college libraries affiliated to University of Pune with website listed on Directorate of Technical Education, Maharashtra, has been used.(www.dtemaharashtra.gov.in) Preliminary survey of websites of engineering college libraries affiliated to University of Pune has been conducted for evidence of digital reference services. Out of 114 colleges, 99 colleges are providing digital references services. These 99 college libraries are used as sample. Convenience sampling method is used and 90 engineering college libraries are selected for study of their digital reference services.

For this study both primary and secondary data is used. Primary data is collected by using questionnaire technique. As per convenience sampling method questionnaires are distributed to 90 engineering college libraries under study. Seven questionnaires for each college including one for librarian and six for users (Faculties, Researchers and Students) are distributed with request to fill up these questionnaires. Thus total 630 questionnaires are mailed, out of which 90 for librarians and 540 for users are mailed. Out of these questionnaires fully filled 392 questionnaires are received back. In these 392 questionnaires 56 librarians and 336 questionnaires are received from users. While out of 336 user questionnaires 12 researchers, 136 faculties and 188 students questionnaires are there. Researcher gets 62.22 % response rate for primary data collection.

Secondary data is collected from published books, journals, library literature and database from internet, reports, thesis, dissertations; conference/seminar proceedings, etc. Researcher searches in market and libraries for books on digital reference service, but books are not available on this topic. Hence maximum internet database is used. Secondary data is used for history, development and applications of digital reference services.

After receiving fully filled questionnaires, researcher performs data coding and classification. Then recording of data is done in form of tables which is called as tabulation. For this purpose researcher uses Microsoft Excel Software. From the tabulated data, charts/ graphs are prepared for easy understanding. Statistical process
carried out on the tabulated data is frequency distribution and percentage calculation. 44 tables and 51 charts/ graphs are prepared for interpretation. On the basis of tables, charts and graphs prepared, researcher has carefully made interpretation and conclusions. Based on these conclusions, researcher has made major research findings, recommendations and suggestions. While doing data analysis and interpretation researcher has taken care of fulfilling objectives of the study. With the help of tables created in the data analysis, testing of hypothesis is also done by researcher. For hypothesis testing chi-square test has been used.

This study presents 51 major research findings and 18 research recommendations, also presented further areas of research. All the three hypotheses formulated at the beginning of study are statistically tested and accepted by using chi-square test. In conclusion, current status of digital reference services in engineering college libraries under study has been described. Maximum and minimum provided digital reference services as well as maximum and minimum used digital reference services are described. The study reveals that users of engineering college libraries know the various digital reference services but usage by them is less. The study also reveals that providing digital reference services are expensive in terms of finance. Inspite of all this, users of engineering college libraries are satisfied with digital reference services provided by their libraries.

The present study is represented in the following six chapters:

Chapter – I: Introduction
Chapter – II: Digital Reference Services
Chapter – III: Literature review
Chapter – IV: Data analysis and interpretation
Chapter – V: Findings and Recommendations
Chapter – VI: References

Appendices
1. List of Engineering Colleges
2. Questionnaires (Librarians and Users)
3. Research Papers Published