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RESEARCH PAPER

ACCESSIBILITY AND USE OF ELECTRONIC RESOURCES IN ENGINEERING COLLEGES

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ABSTRACT:

Due to the development of ICT, now every library is well equipped with e-resources. As such, the engineering and technical libraries are also having ICT infrastructure and subscribed to e-resources. But the problem is that still in many of the small private colleges, there is poor infrastructure in terms of electricity, internet connectivity, etc. The engineering colleges were also established by private educational societies and their libraries are providing e-resource based services. It is essential to evaluate the use of e-resources in engineering college libraries. The present study is made to evaluate the use of e-resources in private engineering college libraries in Hyderabad-Karnataka of Karnataka.

INTRODUCTION:

The rapid growth and development of Information and Communication Technology has changed our society. To meet the tremendous information explosion and high demand of information, libraries are now taking the advantage of the digital technology. The digital technology helped to develop the electronic resources such as CD databases, e-books, e-journals, ETDs (Electronic Theses and Dissertations) etc. Hence the presently the library transformed and there are four kinds of libraries. They are Conventional Libraries, Digital Libraries, Hybrid Libraries and Virtual Libraries.

Electronic library is a library that has wide spread use of computers and such other activities as online databases and automated record keeping and computer based decision making. Digital libraries are libraries in which all information exists in digital format. The information itself may however reside on different storage media such as electronic memory magnetic or optical disks, but user will not necessarily perceive any difference between them. Virtual libraries use the technology of Virtual Reality (VR). This is known as tele-presence in its simplest form. In a virtual environment, one would be able to browse without having to physically to go it. Using Virtual Reality equipment and facilities one would be able to enter virtual library, browse around its rooms and shelves, use index or catalogue, and select a book by pointing to it and touching it. The term Virtual Reality refers to an environment or object simulated by computer hardware and software in such a way that the viewer experiences the environment or objects as though it were real (Sangam and Kulkarni, 2001).

The major Information and Communication Technologies (ICT) transformed and

developed the library and information services as under (Mestri and Kumbargoudar, 2006):

- Automation and Mechanization of every function of the libraries;
- Compact Storage of Information, easy accessibility and faster communication;
- Subject databases particularly from academic institutions: Increasing number of institutions, especially academic and research institutes are making databases in their specialized subject made available;
- Automated Library Catalogue: Increasing numbers of libraries are making their Catalogue electronically available over the Internet which may extend the use of library resources.
- List Serves and discussion groups on a wide variety of topics. Participants have the opportunity to exchange and share current information;
- Document Delivery Services may be provided electronically using Internet Technology;
- Electronic Mails allow users to send messages or files to each other;
- Commercial Information databases are available on the internet include, DIALOG, Lexis-Nexis, Dow Jones News/Retrieval and many others;
- Telnet or remote login-allowing users to log into remote sites;
- File Transfer Protocol (FTP) and Hyper Text Transfer Protocol (HTTP) allowing users to access and retrieve files at remote sites;
- Gopher- a text only, non-graphic method to receive internet documents, which have largely been intergenerated into the World Wide Web;
- The World Wide Web allows users to jump from one resource to another in easier way, without going through gopher style menus;
- Video-conferencing and Teleconferencing involves linking more than two users, so that participants from different places over the world can see each other and view presentations;
- The Consortia like UGC-Infonet , INDEST AICTE ,provides the information through access to a large number of journals to academic libraries all over the India. Such services are enabled to economize the services from single platform, to avoid duplication of subscription, to strengthen the services of networking and encouraging research and development by providing information in easy accessible way.
- Open Source Initiatives and Institutional Repositories.

Digital or electronic information is becoming increasingly prevalent now in libraries. Print materials are being digitized to make electronic copies of documents available to the public as well as to protect delicate original documents from excessive handling. Documents stored in thousands of different file formats have created complicated processes necessary for their future preservation. There is also a proliferation of "born-digital" materials that have never existed in print form but still must be effectively managed to ensure their preservation. These born-digital materials are of particular concern to librarians involved in managing digital information because of their recent abundance. As digital documents are produced at increasing rates, there is need to know, collect, retrieve, disseminate and enhance their use in the library.

Any invention in terms of storage and dissemination of information, the technological institutes and engineering colleges should adopt the same. As such, now the engineering colleges in Karnataka have well equipped with modern Information and Communication Technology (ICT) to disseminate the information to the faculty and students. Of course, there are subject databases, e-learning materials, consortia like INDEST, which are providing relevant information to the users in engineering colleges, but there is need to explore the extent of usage of electronic resources compared to the print materials in the engineering college libraries located at Hyderabad-Karnataka region. Hence, the present study is made to know about the use of e-resources in private engineering colleges located in Hyderabad-Karnataka region. Hyderabad-Karnataka region constituted total six districts, namely, Bidar, Raichur, Koppal, Gulbarga (Kalaburagi), Bellary and Yadgir.

OBJECTIVES OF THE STUDY:

Primarily, the study is made to assess the use of e-resources in private engineering college libraries in Hyderabad-Karnataka region of Karnataka. The particular objectives are:
1. To explore the ICT infrastructure in the private engineering college libraries in Hyderabad-Karnataka region;
2. To know about the knowledge of students and faculty members regarding the usage of electronic resources in libraries;
3. To find out the level of usage of electronic resources in private engineering college libraries;
4. To study the problems encountered by the engineering students and faculty members in accessing and using the electronic resources in private engineering college libraries;
5. To assess the level of satisfaction in use of electronic resources by students in engineering college libraries of Hyderabad-Karnataka.

METHODOLOGY:

The present study is made to assess the use of electronic resources in private engineering colleges in Hyderabad-Karnataka region. More than 20 engineering colleges are located in the region, of which majority are managed by private educational societies or associations. There are more than 12000 students studying and 3000 faculty members are working in these engineering colleges. Each of these engineering colleges have well equipped library with access to electronic resources. As it is not possible to survey all the faculty members and students to assess the use of e-resources, a sample survey was made covering total 300 students and 150 faculty members from these colleges through questionnaire. Following are the major findings from the present study:

MAJOR FINDINGS:

Following are the summaries of findings from the present study.

1. Total five private engineering colleges located in Hyderabad-Karnataka are surveyed in the present study. Further, primary data was collected from total 50 faculty and 50 students from each engineering college. Hence, the present study is limited to total 250 faculty members and 250 students in private engineering colleges in Hyderabad-Karnataka.
2. The educational qualifications of 94.0% of the faculty members is M.E or M. Tech, that of 3.2% of the faculty have completed other degrees such as M. Sc and 2.8% of the faculty have completed just B.E or B. Tech respectively.
3. Educational qualifications of the students revealed that 33.2% have got admission after their PUC, 10.4% of the students have took admission after completing their Diploma or B. Sc while entering into the engineering course, 12.8% of the students have completed their B.E or B. Tech and as such at present they are studying in their post-graduation in engineering.
4. On the frequency of visit to the library, 20.8% of the respondents are visiting to library daily, 41.0% are visiting to library weekly, 20.6% are visiting to library fortnightly, 5.4% are visiting to library monthly and 12.2% are visiting to library occasionally. It is observed that majority of the users are visiting their college libraries more regularly. When observed the frequency of visit of faculty members is lesser compared to the students.
5. On the usage of documents in the library, all the respondents are using printed books, printed journals and resources accessible through INDEST Digital Consortium, only 62.2% are accessing e-books and e-journals subscribed by individual college libraries, 61.2% of all the respondents are using internet based open sources, 32.6% are using project reports, theses and dissertations, 18.8% are using subject databases and only 18.4% of the respondents are using other types of documents in the college libraries. It is observed that majority of the users are using the documents, which are accessible through electronic media such as internet.

6. It is highlighted on the expertise to use computers that, 55.4% of the total respondents are fully experts in use and operating the computer systems followed by, 22.8% are not experts, but are experts only in operating and using web based applications, 19.0% of the respondents are using and operating the computer systems as per the guidance of library professionals and 2.8% of the respondents are using and operating the computer systems as per the guidance of other experts. To sum up, a great majority of the respondents are fully experts in operating computers and web based applications and only few of the respondents are not experts. In this respect, the library professionals and other computer professionals are playing significant role in guiding the faculty members and students in operating computers and accessing internet and also using the e-resources.

7. On the level of knowledge about internet, only 56.8% of all the respondents have excellent knowledge and expertise on operating and accessing internet followed by, 21.8% have very good knowledge and expertise in use and operating of internet, 19.0% of the respondents have satisfactory knowledge about internet and the remaining only 2.4% have poor knowledge and expertise in access of internet and as such they need guidance from the experts. It is noted that to access the electronic resources online, it is essential on the part of the students and faculty to possess very good knowledge about the internet and its applications. Hence, it is suggested to the library professionals to train the users to gain expertise in using and accessing internet.

8. It is emphasized that all the respondents covered under the study are experts in Windows operating system followed by 28.4% are experts in DOS, 27.0% are experts Unix, Linux Red Hat, Ubuntu, etc., and 12.4% are also experts in other operating systems respectively. It is highlighted that Widows operating system is most popular operating system as it is known to all the respondents covered under the study.

9. Like expertise in operating systems, all the respondents are experts in MS-Office, Adobe Reader, Text and Notepad followed by, 38.6% are experts in HTML/XML, 18.4% are experts in Page Maker and 8.8% are experts in other software respectively. It is noted that all the respondents are experts only in essential software such as MS-Office, Adobe Reader and Note pad. But majority of the respondents are not experts in web publishing software such as HTML/XML, etc.

10. On the place of internet access among all the respondents, 59.4% are accessing internet in library, 15.4% are accessing internet in their respective departments, 14.0% are accessing internet in central laboratories or computer laboratory, 7.8% are accessing internet in cyber café or internet centres and 3.4% are accessing internet in other places such as their homes or mobile phones.

11. General applications are popular among all the internet communities. As such, all the respondents are using search engines and electronic mail, 23.4% are using web logs, 10.4% are using open sources, e-prints and archives, 71.6% are using Government Web sites and institutional portals, 40.8% are using news sites and entertainment sites, 10.8% are using Directories, 36.0% are using Discussion Forums, Groups and Mailing List providers, 43.8% are using social networking sites and 17.0% are using other web sites or information sources that are available on the web. It is observed that the knowledge of the many respondents is poor as they are not searching many of the useful information sources that are available on the web and they include open archives, e-prints, open sources, institutional repositories, directories, Discussion Forums, Groups, etc. It is observed that the students are having more knowledge on entertainment sites such as entertainment sites, social networking sites and on the other hand, the faculty members are more interested in searching basic search, government web sites and scholarly information sources.

12. On the frequency of internet usage by all the respondents, 28.6% are browsing internet weekly followed by, 25.8% are browsing internet occasionally, 23.8% are browsing internet daily, 14.2% are browsing internet monthly and the remaining only 7.6% are browsing internet monthly respectively. It is highlighted that a great majority of the respondents are aware about the significance of internet and as such, they are browsing internet more frequently.

13. On the use of different forms of electronic resources, as expressed by all the respondents

covered under the study, 61.2% are using electronic books, 62.2% are using electronic journals, 10.4% are using e-prints and archives, 4.4% are using institutional repositories, 93.2% are using electronic resources subscribed through INDEST Digital Library Consortium 5.6% are using subject databases and 10.8% are using other types of electronic resources. It is also noted that all the respondents are using INDEST consortium, but few of them are not using it regularly, as they are not experts in searching and browsing the resources subscribed through INDEST Digital Library Consortium. To sum up, a great majority of the respondents are using electronic resources subscribed through INDEST Digital Library Consortium, but majority of the users are not using other resources that are subscribed by individual libraries or resources that are freely available in the web.

14. Expertise in using INDEST Consortium by the faculty members revealed that 27.2% are fully experts, 30.4% of the faculty are very good in searching the INDEST, 32.8% of the faculty members have remarked that their knowledge is satisfactory in searching the INDEST Digital Library Consortium and the knowledge of 9.6% of the faculty members searching the INDEST is poor and hence, they need guidance. It is noted that almost faculty members are experts or have good knowledge about searching the electronic resources subscribed through INDEST Digital Library Consortium.

15. Like faculty members, the knowledge of 39.2% of the students covered under the study is satisfactory in searching electronic resources subscribed through INDEST Digital Library Consortium followed by, that of 34.8% of the students is very good, the knowledge of 22.0% of the students in searching of INDEST electronic resources is fully perfect and are fully experts and the knowledge of only 4.0% of the students is poor and they need guidance to use these resources. It is noted that almost students are experts or have good knowledge about searching the electronic resources subscribed through INDEST Digital Library Consortium.

16. On the source of knowledge to know about INDEST Digital Library Consortium, 79.6% of the respondents have got knowledge about INDEST Digital Library Consortium by library professionals, 3.8% have gained the knowledge about INDEST through their colleagues and friends, 8.8% have got knowledge about the same through advertisements and 1.2% of the respondents have got knowledge about the INDEST Digital Library Consortium through browsing internet. It is highlighted that library professionals working in engineering colleges are playing significant role in increasing information literacy related to the INDEST Digital Library Consortium and the advertisements, colleagues, friends and teachers are also playing important role in increasing use of resources subscribed through INDEST Digital Library Consortium.

17 .On the purpose to use electronic resources and consortium, 42.6% of the respondents are using the electronic resources and consortium for preparing the notes, 27.4% are using these resources to update the knowledge, 12.0% are using these resources for teaching and research and 18.0% of all the respondents are using the electronic resources and consortium for other purposes.

18. The proportion of the faculty members who are not aware about different forms of e-resources revealed that, e-books (14.4%), e-journals (7.2%), e-lecture notes and study materials (62.0%), e-dictionaries (72.8%), e-projects, theses and dissertations (51.6%), e-newspapers (28.4%), e-encyclopedias (77.6%), Web OPAC (90.0%), e-patents and standards (91.6%) and online subject databases (41.2%).

19. The proportion of the students who are not aware about different forms of e-resources revealed that, e-books (26.0%), e-journals (15.6%), e-lecture notes and study materials (31.2%), e-dictionaries (73.6%), e-projects, theses and dissertations (50.8%), e-newspapers (16.4%), e-encyclopedias (68.4%), Web OPAC (84.4%), e-patents and standards (92.4%) and online subject databases (59.6%).

20. Most frequent use of different forms of e-resources by faculty members revealed that, e-books (63.5%), e-journals (42.2%), e-lecture notes (34.7%), e-dictionaries (25.0%), e-projects, theses and dissertations (35.5%), e-newspapers (15.6%), e-encyclopedias (19.6%), Web OPAC (24.0%) and Online Subject Databases (23.8%).

21. Frequent use of different forms of e-resources by faculty members shows that, e-books (30.8%), e-journals (47.8%), e-lecture notes (49.4%), e-dictionaries (32.3%), e-projects, theses

and dissertations (38.0%), e-newspapers (62.5%), e-encyclopedias (44.6%), Web OPAC (52.0%) and Online Subject Databases (43.5%).

22. Most frequent use of different forms of e-resources by students disclosed that, e-books (35.1%), e-journals (32.2%), e-lecture notes (38.5%), e-dictionaries (12.1%), e-projects, theses and dissertations (17.0%), e-newspapers (15.3%), e-encyclopedias (22.8%), Web OPAC (15.3%) and Online Subject Databases (15.8%).

23. Frequent use of different forms of e-resources by students revealed that, e-books (56.2%), e-journals (47.4%), e-lecture notes (45.7%), e-dictionaries (40.9%), e-projects, theses and dissertations (45.5%), e-newspapers (35.4%), e-encyclopedias (48.1%), Web OPAC (35.9%) and Online Subject Databases (27.7%).

24. Fully usefulness of different forms of e-resources as stated by faculty members revealed that, e-books (62.6%), e-journals (45.2%), e-lecture notes (23.1%), e-dictionaries (39.7%), e-projects, theses and dissertations (26.4%), e-newspapers (20.1%), e-encyclopedias (37.5%), Web OPAC (16.0%), e-patents and standards (14.3%) and Online Subject Databases (19.0%) respectively.

25. Usefulness of different forms of e-resources as expressed by faculty members shows that, e-books (31.8%), e-journals (42.2%), e-lecture notes (68.4%), e-dictionaries (32.3%), e-projects, theses and dissertations (53.7%), e-newspapers (69.8%), e-encyclopedias (53.6%), Web OPAC (36.0%), e-patents and standards (23.8%) and Online Subject Databases (42.8%) respectively.

26. Fully usefulness of different forms of e-resources as opined by students covered under the study revealed that, e-books (57.3%), e-journals (30.3%), e-lecture notes (34.3%), e-dictionaries (21.2%), e-projects, theses and dissertations (9.7%), e-newspapers (13.4%), e-encyclopedias (20.2%), Web OPAC (12.8%), e-patents and standards (15.8%) and Online Subject Databases (13.8%) respectively.

27. Usefulness of different forms of e-resources as expressed by students disclosed that, e-books (30.2%), e-journals (19.9%), e-lecture notes (42.1%), e-dictionaries (40.9%), e-projects, theses and dissertations (35.8%), e-newspapers (37.3%), e-encyclopedias (48.1%), Web OPAC (28.2%), e-patents and standards (36.8%) and Online Subject Databases (23.8%) respectively.

28. Higher satisfaction of faculty members on use of different forms of e-resources revealed that, e-books (40.2%), e-journals (42.2%), e-lecture notes (23.1%), e-dictionaries (22.0%), e-projects, theses and dissertations (20.6%), e-newspapers (20.6%), e-encyclopedias (42.8%), Web OPAC (16.0%), e-patents and standards (14.3%) and Online Subject Databases (12.2%) respectively.

29. Satisfaction of faculty members on access and use of different forms of e-resources shows that, e-books (34.1%), e-journals (24.1%), e-lecture notes (48.4%), e-dictionaries (32.3%), e-projects, theses and dissertations (47.9%), e-newspapers (51.4%), e-encyclopedias (32.1%), Web OPAC (44.0%), e-patents and standards (19.0%) and Online Subject Databases (36.0%).

30. High satisfaction of students on use of different forms of e-resources revealed that, e-books (51.9%), e-journals (22.3%), e-lecture notes (29.3%), e-dictionaries (21.2%), e-projects, theses and dissertations (8.1%), e-newspapers (17.2%), e-encyclopedias (22.8%), Web OPAC (12.8%), e-patents and standards (21.0%) and Online Subject Databases (25.7%) respectively.

31. Satisfaction of students on access and use of different forms of e-resources made it clear that, e-books (32.4%), e-journals (40.7%), e-lecture notes (38.6%), e-dictionaries (40.9%), e-projects, theses and dissertations (25.2%), e-newspapers (37.3%), e-encyclopedias (45.5%), Web OPAC (35.9%), e-patents and standards (42.1%) and Online Subject Databases (30.7%).

32. On the knowledge update of faculty members, it is noted that 12.8% are getting updates from library bulletins or newsletters, 6.4% of them are getting knowledge updates from information literacy and library training sessions, majority that is, 57.2% of the faculty members are getting knowledge updates from library staff personally, 18.0% of the faculty members are getting knowledge updates from their friends and colleagues and only 5.6% of the faculty members are getting knowledge about e-resources from other sources.

33. As expressed by the students, a majority, that is 44.4% are getting knowledge update on electronic resources from personal guidance of the library professionals followed by, 25.2% are getting knowledge update from their friends, 18.8% are getting knowledge update on e-resources from Library Bulletins and Newsletters, 9.2% are getting knowledge update on e-resources from

information literacy and library training sessions and the remaining 2.4% are getting knowledge update from other sources.

34. On the approach to use e-resources, 79.6% of all the respondents are searching Boolean operators or by keywords followed by, 17.0% are searching for e-resources by using title and 3.4% are searching for e-resources by searching authors' names.

35. It is surprising to note that only 43.4% of all the respondents are using the subject databases, whereas 35.2% are not using the subject databases and the remaining 21.4% are not aware about these databases.

36. Further, only 10.6% of the respondents are using subject databases most frequently, 32.8% are using the subject databases frequently, 35.2% are not using subject databases and it is not applicable to 21.4% of the respondents as they are not aware about the subject databases.

37. On the frequency of usage of INDEST Digital Library Consortium, 26.8% of the respondents are accessing and using INDEST Digital Library Consortium weekly followed by, 25.6% are accessing and using INDEST fortnightly, 24.2% of the respondents are accessing and using INDEST Digital Library Consortium occasionally, 12.2% are using the same monthly and 11.2% are using INDEST Digital Library Consortium daily.

38. Frequently searched e-resources by all the respondents revealed that, ACM Digital Library (9.6%), Annual Reviews (19.6%), ASCE Journal (33.0%), ASME Journals & AMR (16.4%), Capitaline (4.4%), CRIS INFAC Industrial Information (6.4%), EBSCO Database (38.6%), Elsevier's Science Direct (58.6%), Emerald E-Books & Journals (13.6%), Euromonitor (GMID) (4.2%), IEEE/ IEE Electronic Library Online (62.4%), Indian IEC Standards/ ASTM Standard Digital Library (16.8%), INFORMS Publications (6.2%), Insights (21.6%), J-Stor (29.8%), McGraw Hill's Access Engineering (71.0%), Nature (5.4%), Optical Society of America (5.4%), Project Muse (33.0%), ProQuest Science (32.4%), Springer Verlag Link (55.4%) and Taylor & Francis Group publications (53.6%).

39. The particular online subject database used by all the respondents (who are using databases) revealed that, COMPENDEX on EI Village (6.8%), INSPEC on EI Village (4.0%), J-Gate Custom Content for Consortia (24.6%), MathSciNet (18.8%), SciFinder Scholar (27.6%), SCOPUS Database (34.8%) and Web of Science (33.8%).

40. The information collected on the use of different forms of open sources of shows that, Open Archives/ e-prints (23.0%), free e-books / e-journals (31.0%), free references sources (7.4%), Electronic Theses and Dissertations (4.8%), Institutional Repositories (2.6%) and such other open sources (3.8%) are used by the respondents.

41. Methods to use the e-resources, as expressed by all the respondents revealed that, 64.2% are downloading, saving the files in computer and read the same followed by, 23.0% are reading the articles online, 7.6% are reading the articles online on screen and get the relevant articles printed and 5.2% are taking the prints of articles online respectively.

42. Download file format of the e-resources by all the respondents disclosed that, 76.6% are downloading the files of e-resources in PDF followed by 18.8% are downloading the files in HTML/ XML formats and only 4.6% are downloading the files in MS-Word formats respectively. Hence, it can be concluded that Printed Document Format (PDF) is the most popular format to download the e-resources by the users.

43. It is highlighted that all the respondents need only e-journals and not same copies of printed journals.

44. Level of satisfaction on use of e-resources in INDEST Digital Library Consortium shows that, 38.4% of all the respondents are satisfied to a greater extent, followed by 26.2% are fully satisfied, 23.8% are highly satisfied and 11.6% are not satisfied respectively.

45. On the problems faced by the respondents while accessing and using e-resources, 37.8% of the respondents have not faced any of the problems while accessing and using INDEST Digital Library Consortium, whereas majority, that is 62.2% have faced problems while accessing and using the e-resources from the consortium.

46. The particular problems faced by all the respondents while accessing and using e-resources and INDEST Digital Library Consortium, 55.8% of the respondents have faced the problem of

slower internet connectivity followed by, 51.0% have felt that they can't find the needed e-resources, 29.4% have stated that there are inadequate computer systems, 20.2% of the respondents lacks expertise in access and use of e-resources, 16.0% have lack of time and training and for the remaining 37.8% of the respondents, it is not applicable as they are not facing any of such problems.

47. It is emphasized that only 39.6% of the respondents have preferred to use the documents in printed form, whereas 60.4% have preferred to use the documents in electronic format.

48. It is highlighted that 53.0% of the respondents have felt the need for training or orientation in accessing and using e-resources, whereas 47.0% have not felt need for such training or orientation.

49. On whether there is need for more e-resources to be subscribed under INDEST Digital Consortium, 63.0% of the respondents have stated that there is need for more resources to be subscribed under INDEST Digital Library Consortium, whereas the remaining 37.0% have felt no need for more e-resources to be subscribed under the Consortium.

50. It is noted that only 16.2% of the respondents are getting e-resource based personalized services from their libraries, whereas 83.8% of the respondents are not getting any of such services.

51. Of the respondents, who are getting e-resource based personalized services from their libraries, 6.4% of the respondents are getting Electronic Document Delivery Service, 9.8% are getting Document Print Service and for the remaining 83.8% of the respondents, it is not applicable as they are not getting any of such services.

52. The services expected by respondents depicted that, 25.6% of the respondents are in need of e-alerts, 24.0% are needed Content Alerts, 17.0% of the respondents are needed Electronic Document Delivery Service, 17.2% are needed Document Print Service and for the remaining 16.2% of the respondents, it is not applicable as they are getting such services already.

53. User rating of the INDEST Digital Library Consortium made it clear that, 31.4% have rated INDEST Consortium as satisfactory followed by, 30.2% have rated INDEST as not satisfactory, 27.0% have rated INDEST Digital Library Consortium as very good and only 11.4% have rated the consortium as excellent respectively.

SUGGESTIONS:
The following suggestions may be made from the present study.

1. It is suggested to the users to increase the frequency of visits to their college libraries, so that they can get awareness on the newly purchased books and newly subscribed journals and also get knowledge about new technology and new library services.

2. Usage of documents other than printed books, printed journals, e-books and e-journals, is limited by the users in the library. Hence, it is suggested to library professionals to increase awareness of the faculty members and students about other forms of documents such as project reports, theses, dissertations, annual reports, directories, open sources, etc.

3. Many of the faculty members and students are not fully expert in operating computers and internet and hence, it is suggested to these users to increase their knowledge by getting training in computer and internet skills.

4. Many of the information sources such as web based directories, discussion forums, e-groups, social networking, web logs, open sources, etc are not used by many of the users in the library. As these are useful information sources, it is suggested to the users to access and use them to get information.

5. It is suggested to the engineering colleges to purchase more computers for library and provide speediest internet connection, so that the e-resources are used fully.

6. It is suggested to the library professionals to organize the user education/ information literacy programmes for the faculty members and students at least once in a year and also display about new arrivals (both print and electronic) purchased or subscribed to the library.

CONCLUSION:

To conclude, scientific and technical development is depends on effective technical education. Effective and useful technical education is imparted by engineering colleges. Hence, engineering colleges are playing significant role in improvement and development and science and technology.   The libraries attached to the engineering colleges have to deal with the needs of the students and faculty members in various disciplines. It is the responsibility of the engineering college libraries to provide the required information for the students and faculty members from time to time.

Many of the users felt that there are lesser number of computers in library and slower internet connection. There is need to upgrade internet connectivity in libraries and purchase more computers so as to give best services to the users. Majority of the users suggested that there is need for user orientation or user education in use of e-resources by library professionals.   There is also need to increase the e-resources in INDEST Digital Library Consortium.

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* Contemporary Research Index
* Academic Paper Databse
* Digital Journals Database
* Current Index to Scholarly Journals
* Elite Scientific Journal Archive
* Directory Of Academic Resources
* Scholar Journal Index
* Recent Science Index
* Scientific Resources Database