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Use of ICT among Faculty Members of Self Financing Engineering Colleges in the Changing Higher Education Environment

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Introduction

India actively promotes the use of information and communication technologies (ICTs) in education in the formal education sector today, as it has in the non-formal sector for more than 40 years. From the use of radio to spearhead the green revolution, to satellite-based, one-way and interactive television for rural development in some of the most backward districts, to today's thrust for the use of open and distance learning models to serve the larger populations, India has tried it all, with varying degrees of success. In fact, since the early 1950s, Indian policy documents have identified the need to use all media for promoting development and, implicitly, for education. The subsequent policy and plan documents on education, prepared from time to time, have chalked out a role for technology applications, especially in the non-formal education sector. Today, the country's decision-makers, at both the central and state levels, have chosen to explore the use of newer computer and Internet based ICTs for education, along with broadcast ICTs, and have been promoting the use of open and distance learning for both the formal and non-formal education sectors. The launch of a dedicated broadcast education satellite, EDUSAT, is scheduled for early 2004, with capacity for specialised educational channels and up to 5000 FM community broadcasting stations for use by educational institutions. This infrastructure will be available to all sectors of education, but primarily to publicly funded and implementing agencies that will be responsible for transmission and programming for their defined audiences.

The Internet facility in India has grown tremendously over the years. The use of Internet is rapidly increasing owing to its efficiency and capability in providing right information to the right person at the right time. It works around the clock and connects every corner of the world. Internet has become an unavoidable necessity for every institution of higher learning. The engineering and technical

education is important for the development of any country. The engineering colleges are very much needed for the scientific advancement of the country. For making engineering faculty more accomplish and innovative in the work force information play vital role, for accessing information and keeping abreast with the new developments, Internet is becoming an essential human needs with all its facets.

Today, the advent of information technology has resulted in reducing the size of libraries. In fact, these smaller modern libraries are rich potential of information. It has been possible due to the digitization of information. The digital and electronic information is based on digitized data/information, which has gradually replaced paper-based records. As the visual information system in comparison to text based information system is getting more and more popular these days, the traditional libraries are becoming hybrid libraries as they are in the process of doing digitization of their documents and moving towards to become digital libraries. There are number of terms which are used by authors to represent the concept of digital libraries. These terms are; polyglot library, electronic library, desktop library, online library and library without walls etc. The term 'digital and electronic library' is the common word used by majority of the authors. A digital library is defined as "an organized collection of online full-text digital information focused on one or more specific subject areas" (Monopoli et al., 2002).

ICT and Services

In the fast-emerging and ever-growing information explosion it is very difficult to retrieve particular information without wasting time. Recent advances in the field of information technology contribute significantly to improve the services of libraries. Now-a-days libraries are not only seen with printed document and non-print document but also with computers. The impact of technologies such as CD-ROMs, multimedia, computer networks, Internet, etc. have lead to a paperless society. With the availability of computers, capable of computing at very high speed and having large disc storage space, it is possible to digitize and store information in the form of high quality graphics, color images, voice signal and video clips at a relatively affordable cost.

There are several forms and types of electronic resources which are available on the Internet, some of the popular ones that are gaining ground are the electronic journals, standards, technical specifications, reports, patents, full text articles, trade reports and hosts of other document sources. Also the printed editions of scholarly journals are available on the web. The publishers of journals are themselves providing services like contents, abstracts of articles, full text, before the actual printed edition is put on the stands. Majority of this kind of service providers are those publishers who have several journal publications to their credit, e.g., Elsevier, Academic press, Springer, Oxford University Press, Taylor and Franc's Blackwell Science and others. Their services are available to anyone having access to e-mail and importantly are free of cost. Some of the journals are only available on commercial basis for which library has to pay the required amount, and for these journals, users have to pay for the view and if need, per copy for the print also.

E-journals are called by various names such as electronic journals, Internet based serials, online journals, e-serials and electronic serials. But the term 'e-journals' have become a standard name for calling the electronic journals, as these are available electronically via a computer or a computer network. These may or may not be published in some other (physical) medium but these are not available on CD-ROMs or diskettes. The advantage of the electronic resources is ubiquity – many users can simultaneous access a single electronic copy from many locations. Copies can be delivered with electronic speed, and it would be possible to reformat the material as per the reader's preference (e.g. character size). Since readers get a screen display of the object, rather than a physical object, loss rates by theft are

eliminated. Digital storage also permits libraries to expand the range of material, they can provide to their users since audio cassette tapes and records cannot stand a large number of playing without deterioration, their digital representation (digital audio) can produce a format

that is much safer and of better quality. Digital material can also permit access to video tapes and new kinds of multimedia materials that are created only on computers and have no equivalent in any traditional format. The digital information can be copied without error. As a result preservation in a digital world does not depend on having a permanent object and keeping it under guard, but on the ability it makes multiple copies assuming that at least one will survive.

Literature Review

Biradar and others (2006) conducted a study on Internet usage by the students and faculties in Kuvempu University. The results indicated that 42.1 % students use Internet twice a week and 31.25% faculties use it every day. The majority of students as well as faculties use Internet for study/ teaching purpose. The favorite place for using Internet is library followed by commercial places. A thumping majority of respondents are satisfied with Internet sources and services.

Asemi (2005) shows that all the respondents were using the Internet frequently because all faculties were provided connection to the Internet. It was revealed that the researchers of the university were getting quality information through the Internet. Fifty-five percent of the respondents searched for scientific information through the Internet because the university library had provided access to various databases and online journals for all the students and staff.

Mishra, Yadav, and Bisht (2005) conducted a study to know Internet utilization pattern of the undergraduate students of G B Pant University of Agriculture and Technology, Pantnagar. The findings of the study indicated that a majority of the students (85.7%) used the Internet. Out of the Internet users 67.7% were male students and 32.3% female students. The findings of the study also showed that 61.5% of the males and 51.6% of the females used Internet for preparing assignments. A majority of the respondents i.e. 83.1% male and 61.3% female respondents indicated that they faced the problem of slow functioning of Internet connection.

Robinson (2005) examined Internet use among African-American college students. The respondents were surveyed by using the 43-item questionnaire to determine the frequency of Internet. The results of the study indicated that most of the students (76%) had used the Internet for more than three years. The use occurred at school or at the work place with 49% of the responses at home. 47% of the responses indicated that they spent an average of two hours per day online. A small percentage of the students spent 5-6 hours per day on the Internet, and 43% of the students used the Internet primarily to learn and find school resources.

Ibrahim (2004) in his study titled "Use and User Perception of Electronic Resources in the United Arab Emirates University (UAEU)" made an attempt to measure the use and perception of the United Arab Emirates University (UAEU) faculty members of electronic resources. He found out that frequency of use of electronic resources was low due to lack of time because of the time needed to focus on teaching; lack of awareness to electronic resources provided by library; ineffective communication channels and language barrier. Stratified random sample questionnaires were sent to the faculty. The questionnaires were self-administered. E-mail and phone calls were also made. 25 per cent sample was drawn department-wise.

Rajeev Kumar and Amritpal Kaur (2004) studied the use of Internet by teachers and students in Shaheed Bhagat Singh College of Engineering & Technology, Ferozepur (Panjab). They found that 46.7% teachers and 36.7% students daily use

the Internet. About 90% respondents use Internet at their college. Yahoo is found as the favorite search engine. Only 31.7% respondents were fully satisfied, whereas 36.7% were partially satisfied with Internet facilities.

Krueger and Ray (2004) carried a survey "Applying Web Usability Techniques to Assess Student Awareness of Library Web Resources" in the library of the University of the Pacific (UOP). Web usability technique was used to assess the student awareness of their libraries and how much library web-site resources are used. 39 per cent of students were familiar; enough with the libraries web resources to value them for seeking information resources. 6 per cent used library web resources but chose the wrong sort of resources. They concluded that Web usability technique was used to assess the students' awareness of their libraries web site and how much library web-site resources are used. They have reported 45 per cent of students were sufficiently aware of library web resources to use them as first tool of choice.

Hickerson (2003) conducted a research study titled "Instructional Productivity and the Use of E-mail and Websites" to examine the relationship between the instructional use of e-mail and websites by faculty members. The possible relationships were examined using the responses in the 1998 and 1999 National Study of postsecondary faculty from all fulltime faculty members who taught credit classes and had the principal duty of instructions. Five statistically significant differences between outputs from faculty members using email and those who are not using e-mail were found in the study. The users of e-mail produced statistically significant fewer classroom credit hours and students contact hours per week. The results of the study for website users revealed that for statistically significant differences between outputs from faculty members using websites and those who are not using websites produced statistically significant fewer classrooms credit hours and taught statistically significant fewer classes.

Objectives of the Study

The following objectives are evolved for the purpose of the present study:

- To examine the respondents' duration and quantum of time utilization in search of information.
 - To assess the contemporary use of electronic information resources by the faculty members.
 - To analyze the respondents' extent of access to e-resources
 - To examine the attitude of the faculty members towards use of e-resources.
 - To find out the main reason(s) behind the usage of electronic resources by them.
 - To study the respondents' satisfaction and problems in utilizing the e-resources

Methodology

The researcher has employed a well structured questionnaire for collecting the data from the faculty members of self financing engineering colleges of Salem. The questionnaire has been prepared in such a way that the respondents could easily understand the items. A total number of 300 questionnaires were distributed among the faculty members, who reside in and around Salem. The investigator could collect questionnaires from only 240 out of 300 engineering faculty members among whom the questionnaires were distributed. This constitutes 80% (240/300) of the total response.

Data Analysis

Table 1. Subject wise Distribution of Respondents

Subject	No. of Respondents	Percentage
Civil Engineering	48	20.00
Mechanical Engineering	56	23.33
Electrical Engineering	70	29.16
Computer Science Engineering	38	15.84
Chemical Engineering	28	11.67
Total	240	100.00

A study of data in table-1 indicates the subject wise distribution of respondents. It could be noted that out of the total 240 respondents, 20 per cent of them are civil engineering and 23.33 per cent of them are mechanical engineering. In this study, 29.16 per cent of the respondents are electrical engineering and 15.84 per cent of them are computer science engineering. It is observed that 11.67 per cent of the respondents are chemical engineering.

It is concluded that more electrical engineering followed by mechanical engineering are the respondents in the study.

Table 2. Age wise Distribution of Respondents

Age	No. of Respondents	Percentage
Below 30	79	32.91
31-35	48	20.00
36-40	32	13.33
41-45	20	8.33
46-50	28	11.67
Above 50	33	13.76
Total	240	100.00

A study of data in table-2 indicates the age wise distribution of respondents. It could be noted that out of the total 240 respondents, 32.91 per cent of them belong to the age group of below 30 years and 20.00 per cent of them come under the age group of 31-35 years. In this study, 13.33 per cent of the respondents' age is in the range of 36-40 years and 8.33 per cent of them are found in the age group of 41-45 years. It is observed that 11.67 per cent of the respondents belong to the age group 46-50 years and the rest 13.67 per cent of them belong to the age group of above 50 years. It is concluded from the above table that majority of the respondents are found to be with the age group of below 30 years.

Table 3. Gender wise Distribution of Respondents

Gender	No. of Respondents	Percentage
Male	146	60.83
Female	94	39.17
Total	240	100.00

A study of data in table-3 indicates the gender distribution of respondents. It could be noted that out of the total 240 respondents, majority of the respondents (60.83%) belong to the male group and the rest of them (39.17%) are females. It is concluded that male respondents constitute more in number than female respondents.

Table 4. Subject wise Respondents' Frequency of Access to Internet

Subject	Less than 2 hours	2-3 hours	3-4 hours	4-5 hours	Above 5 hours	Total
Civil Engineering	18	10	6	8	6	48
	(37.50)	(20.84)	(12.50)	(16.66)	(12.50)	
Mechanical Engineering	10	12	8	10	16	56
	(17.86)	(21.42)	(14.28)	(17.86)	(28.58)	
Electrical Engineering	6	8	28	22	6	70
	(8.57)	(11.43)	(40.00)	(31.43)	(8.57)	
Computer Science Engineering	16	4	8	6	4	38
	(42.11)	(10.53)	(21.05)	(15.78)	(10.53)	
Chemical Engineering	7	5	7	5	4	28
	(25.00)	(17.86)	(25.00)	(17.86)	(14.28)	
Total	57	39	57	51	36	240
	(23.75)	(16.25)	(23.75)	(21.25)	(15.00)	

Data presented in table-4 indicate the subject wise respondents' frequency of access to Internet. It could be noted that majority of the computer science faculty respondents (42.11%) have below 2 hours of access to Internet. Majority of the electrical engineering faculty respondents (40.00 %) have 4-5 hours of access to Internet. Around one third of the mechanical engineering faculty respondents (28.58%) have above 5 hours of access to Internet.

It could be seen clearly from the above discussion that 2-3 hours of access to Internet is quite common among the civil and mechanical engineering faculties.

Table 5. Subject wise Respondents' Frequency of Library Visits

Subject	Daily	Thrice a Week	Once in a Week	Once in a Fortnight	As and When Required	Total
Civil Engineering	6	12	16	8	6	48
	(12.50)	(25.00)	(33.34)	(16.66)	(12.50)	
Mechanical Engineering	10	6	14	10	16	56
	(17.86)	(10.70)	(25.00)	(17.86)	(28.58)	
Electrical Engineering	18	18	6	22	6	70
	(25.71)	(25.71)	(8.57)	(31.44)	(8.57)	
Computer Science Engineering	14	4	10	6	4	38
	(36.85)	(10.53)	(26.31)	(15.78)	(10.53)	
Chemical Engineering	10	5	4	5	4	28
	(35.72)	(17.86)	(14.28)	(17.86)	(14.28)	
Total	58	45	50	51	36	240
	(24.16)	(18.75)	(20.83)	(21.26)	(15.00)	

Data presented in table-5 indicate the subject wise respondents' frequency of library visits. It could be noted that majority of the computer science and chemical engineering faculty respondents make library visit daily. Majority of the civil engineering faculty respondents (33.34%) make library visit once in a week. One third of electrical engineering faculty respondents (31.44%) make library visit once in a fortnight. Around one fourth the mechanical engineering faculty respondents (28.58%) make library visit as and when required.

It could be seen clearly from the above discussion that computer science and chemical engineering faculty respondents mainly make library visit daily and civil engineering faculty respondents make high level of library visit at once in a week.

Table 6. Subject wise Respondents' Mode of Searching Documents in the Library

Subject	Library Catalogue	Library Staff	Directly Search in the Stack	OPAC	Online Database	Total
Civil Engineering	18	10	6	8	6	48

	(37.50)	(20.84)	(12.50)	(16.66)	(12.50)	
Mechanical Engineering	10	6	14	10	16	56
	(17.86)	(10.70)	(25.00)	(17.86)	(28.58)	
Electrical Engineering	6	8	28	22	6	70
	(8.57)	(11.43)	(40.00)	(31.43)	(8.57)	
Computer Science Engineering	16	4	8	6	4	38
	(42.11)	(10.53)	(21.05)	(15.78)	(10.53)	
Chemical Engineering	10	5	4	5	4	28
	(35.72)	(17.86)	(14.28)	(17.86)	(14.28)	
Total	60	33	60	51	36	240
	(25.00)	(13.75)	(25.00)	(21.25)	(15.00)	

Data presented in table-6 indicate the subject wise respondents' mode of searching documents in the library. It could be noted that majority of the computer science faculty respondents (42.11%) and also chemical engineering faculty respondents (35.72%) search library documents with the help of library catalogue. A considerable number of electrical engineering faculty respondents (40.00%) directly search library documents. Around one third of the mechanical engineering faculty respondents (28.58%) make use of online database to search library documents.

It could be seen clearly from the above discussion that electrical engineering faculty make use of OPAC to search documents in the library and mechanical engineering faculty make use of online database to search library mainly.

Table 7. Subject wise Respondents' Satisfaction on Search Engines

Name of the Search Engines	Subject					Total
	Civil	Mechanical	Electrical	Computer Science	Chemical	
Google.com	3.81	2.52	4.11	2.96	3.96	4.01
Yahoo.com	4.11	2.96	4.12	3.14	4.10	3.90
msn.com	3.77	2.26	3.90	2.56	3.76	3.51
sanook.com	2.77	3.11	3.44	3.15	3.52	3.16
hunsa.com	3.52	3.15	2.90	2.85	2.44	2.96

Altavista	2.81	3.52	3.71	3.81	2.52	3.18
Excite	3.85	3.79	2.36	4.11	3.36	3.85
Euroseek	2.36	2.96	3.65	3.36	2.12	2.52
Total	3.38	3.03	3.52	3.24	3.22	3.39

A study of data in table-7 indicates the subject wise respondents' satisfaction on search engines. The electrical engineering faculty respondents occupy the first position with respect to their overall satisfaction on all search engines as their secured mean score is 3.52 on a 5 point rating scale. The civil engineering faculty respondents take the second position in their overall satisfaction on all search engines as their secured mean score is 3.38 on a 5 point rating scale. The computer science engineering faculties rank in the third position in their overall satisfaction on all search engines as their secured mean score is 3.24 on a 5 point rating scale. The chemical engineering faculty respondents take the fourth position in their overall satisfaction on all search engines as their secured mean score is 3.22 on a 5 point rating scale. The mechanical engineering faculty respondents occupy the fifth position in their overall satisfaction on all search engines as their secured mean score is 3.03 on a 5 point rating scale.

It could be seen clearly from the above discussion that electrical engineering faculty respondents occupy the first position with respect to their overall satisfaction on all search engines, civil engineering faculty the second, computer science engineering faculty the third, chemical engineering faculty the fourth and mechanical engineering faculty the last.

Table 8. Subject wise Respondents' Purpose of Using E-resources

Purpose for Using E-resources	Subject					Total
	Civil Engineering	Mechanical Engineering	Electrical Engineering	Computer Science Engineering	Chemical Engineering	
For research	3.55	3.14	2.76	3.01	2.96	3.09
For improving area of specialisation	3.48	3.65	2.53	2.42	2.14	3.23
E-books	3.99	3.49	3.72	3.89	3.59	3.80
Career Information	3.36	3.42	2.18	2.26	3.26	2.92
Preparation for class teaching	4.21	3.11	3.85	3.14	2.96	4.02
INDEST Consortia	4.14	4.21	3.55	3.26	3.12	3.90
E-journals	4.10	4.05	3.62	3.56	3.44	3.85
General Information	3.52	3.10	2.36	2.49	2.16	2.78

Sending and receiving e-mail	4.21	4.21	3.81	3.78	3.57	4.00
Entertainment	3.33	2.42	2.21	2.56	2.89	2.65
Total	3.85	3.59	3.16	3.09	3.00	3.49

A study of data in table-8 indicates the subject wise respondents' purpose of gathering e-resources. The subject wise analysis examines the following facts. The civil engineering faculty respondents top the position with respect to their overall purpose of e-resources as their secured mean score is 3.85 on a 5 point rating scale. The mechanical engineering faculty respondents take the second position in their overall purpose of gathering e-resources as their secured mean score is 3.59 on a 5 point rating scale. The electrical engineering faculty respondents rank in the third position in their overall purpose of gathering e-resources as their secured mean score is 3.16 on a 5 point rating scale. The computer science engineering faculty respondents take the fourth position in their overall purpose of gathering e-resources as their secured mean score is 3.09 on a 5 point rating scale. The chemical engineering faculty respondents occupy the fifth position in their overall purpose of gathering e-resources as their secured mean score is 3.00 on a 5 point rating scale.

It could be seen clearly from the above discussion that civil engineering faculty respondents take the first position with respect to their overall purpose of gathering e-resources, mechanical engineering faculty respondents the second, electrical engineering faculty the third, computer science engineering faculty the fourth and chemical engineering faculty the last.

Table 9. Subject Wise Respondents' Barriers in Accessing E-Resources

Barriers	Subject					Total
	Civil	Mechanical	Electrical	Computer Science	Chemical	
Difficulty in finding relevant information	3.55	2.98	3.44	4.02	3.98	3.55
Virus	4.05	3.66	3.69	4.11	4.16	4.00
Limited access to computers	3.34	3.52	3.96	4.10	4.05	3.65
Lack of Time	2.26	2.79	3.10	3.50	3.62	2.80
Too much information retrieved	2.65	3.16	3.10	3.41	3.52	2.75
Longtime to view	2.42	2.79	3.21	4.01	4.11	3.20
Slow accessibility	2.49	2.39	2.99	3.65	3.96	2.90
Total	3.02	3.11	3.44	3.85	3.94	3.33

A study of data in table-9 indicates the subject wise respondents' barriers in accessing e-resources. The subject wise analysis examines the following facts. The chemical engineering faculty respondents top the position with respect to their overall barriers in accessing e-resources as their secured mean score is 3.94 on a 5 point rating scale. The computer science faculty respondents take the second position in their overall barriers in accessing e-resources as their secured mean score is 3.85 on a 5 point rating scale. The electrical engineering faculty respondents rank in the third position in their overall barriers in accessing e-resources as their secured mean score is 3.44 on a 5 point rating scale. The mechanical engineering faculty respondents take the fourth position in their overall barriers in accessing e-resources as their secured mean score is 3.11 on a 5 point rating scale. The civil engineering faculty respondents occupy the fifth position in their overall barriers in accessing e-resources as their secured mean score is 3.02 on a 5 point rating scale.

It could be seen clearly from the above discussion that chemical engineering faculty respondents take the first position with respect to their overall barriers in accessing e-resources , computer science engineering faculty respondents the second, electrical engineering faculty the third, mechanical engineering faculty the fourth and civil engineering faculty the last.

Table 10. Subject wise Respondents' Views on Library Services

Subject	Excellent	Good	No Opinion	Poor	Very Poor	Total
Civil	18	10	6	8	6	48
	(37.50)	(20.84)	(12.50)	(16.66)	(12.50)	
Mechanical	10	6	14	10	16	56
	(17.86)	(10.70)	(25.00)	(17.86)	(28.58)	
Electrical	18	18	6	22	6	70
	(25.71)	(25.71)	(8.57)	(31.44)	(8.57)	
Computer Science	16	4	8	6	4	38
	(42.11)	(10.53)	(21.05)	(15.78)	(10.53)	
Chemical	7	5	7	5	4	28
	(25.00)	(17.86)	(25.00)	(17.86)	(14.28)	
Total	69	43	41	51	36	240
	(28.75)	(17.92)	(17.08)	(21.25)	(15.00)	

Table-10 presents data on the subject wise respondents' views on library services. It could be noted that more than one third of the computer science engineering faculty respondents (42.11%) and civil engineering faculty respondents (37.50%) observe that library services are excellent. Around one fourth of the mechanical and chemical engineering faculty respondents view mainly that they have no

opinion about library services. A considerable number of electrical engineering faculty respondents (31.44%) perceive about the poor performance of library service. Around one third of the mechanical engineering faculty members have very opinion about library services.

It is concluded that computer science and civil engineering faculties view mainly about the excellent performance of self financing engineering college library service.

Suggestions

Based on the various observations of the study the following suggestions are made:

- More computer terminals should be installed in the library for easy access to faculty members.
- The problems of slow access speed can be overcome by increasing the bandwidth.
- Increasing resources should be allocated for enriching digital resources for the benefit of users.
- Awareness should be generated on the e-resources to obtain current information.
- The qualified IT staff should be appointed to provide the expert guidance to users about e-resources.
- Some orientation training programmes should be organised by the central library at regular intervals so that the maximum users can improve their excellence or proficiency in the use of Internet and e-resources.
- There is need to develop knowledge about use of electronic theses and dissertations, technical reports, patents, etc., available online.
- Information regarding the popular and the latest websites with their addresses should be displayed on the notice board in the computer lab.
- All the academic news should be provided at the college website and it should be regularly updated.

Conclusion

The library environment has currently undergone drastic change in terms of collections and services. The proliferation of e-resources has had a significant impact on the way the academic community uses, stores, and preserves information. The advantages of e-resources have drawn attention of the library users to a great extent. Accordingly, these resources have occupied a significant place in the collection and budget of almost all libraries. Faculty members' attitudes seem to be very positive towards e-resources for their study and research and the role of libraries as gateway to provide assistance in accessing these resources. Faculty members are heavily dependent on e-resources for their required information and to keep themselves up-to-date in their subject area. Though some expects that the role of libraries as a gateway to the e-resources will have less importance in future as faculty members access more and more e-resources in their respective departments or personal desktop/laptop, it seems to be more hypothetical. Rather the role of libraries in the age of e-resources will increase tremendously, particularly in providing training and guidance to use authentic and relevant information. The libraries are and will develop necessary

tools to provide such services to their users satisfactorily. Higher speeds Wi-Fi campus needs to be developed by self financing engineering colleges, so that faculty members can use online e-resources and Internet within the campus according to their suitability. The speed of Internet needs to be increased for quick access to the available e-resources. The Central Library needs to arrange various orientation and training programmes for faculty members for the optimum use of available e-resources. In this context, the Central Library may arrange orientation programmes, subscribe database. Also, product trials of various e-resources for specific user groups need to be introduced.

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