Access of Electronic Resources in Engineering College Libraries of Assam: An Empirical Analysis

Apurbajyoti Majumdar   **Sharmila Bose Majumdar**

Abstract

The main objective of this research is to analyze and evaluate the use of web based-resources by the engineering college libraries of Assam. It covers the different types of academic users including faculty members, students and research scholars. It aims to consider the various factors of e-resources usage such as purposes, impact, importance, problems, acceptance, and satisfaction with e-resources. The survey was conducted with the help of a structured questionnaire followed by interview as and where it was felt necessary. Two formats of questionnaire were prepared; first, a printed format and second, an electronic format using Google Docs spreadsheet. The data so collected were analyzed and interpreted with the help of MS Excel. The study finds many aspects of e-resources use among engineering academics of Assam. It reveals that engineering college library users are using many types of e-resources. Using the e-resources, their academic/professional competency also improved. The teaching methodology also involved the e-resources uses and the students' ability was also affected in a positive manner by this methodology. Some problems were also explored in using e-resources. The majority of users were quite satisfied with using e-resources. The study was an attempt to evaluate the use of e-resources by users of engineering college libraries of Assam. Results from the study are encouraging and it is hoped that the findings will provide meaning and a useful platform for further research as well as usability among engineering academics will also be improved.

Keywords: Engineering College Libraries, E-Resources, Internet, Technical Libraries

1. Prologue

Due to tremendous growth and continuous developments in technology, the role of library becomes more responsive in making the world techno-savvy. Technological developments have effected not only the formats and sources of the information, but also how and where to provide library services. Libraries and their resources have partially moved to the virtual world of the internet. As a result, library users can access the resources from outside the physical library. In an effort to reach users accessing the library via their computers, many libraries and library consortia are extending their services to include virtual reference. Technology now allows users to submit their queries to the library at any time, from any place in the world.

Libraries have witnessed a great metamorphosis in recent years, both in their collection development and in their service structure. Over the last several years, a significant transformation has been noticed in collection development policies and practices. Print medium is increasingly giving way to the electronic form of materials. Today, the Internet plays a vital role in the teaching, research and learning process. It is assumed that the engineering students in India feel more dependent on the Internet for their

class assignments and for the latest information of their subject areas than conventional resources of information. Engineering teachers also feel a bit handicapped in updating their knowledge base quickly without using the Internet for their research and classroom teaching activities.

The availability of e-resources opens new vistas for teaching, learning and research. In present scenario, information is highly explosive and available in various formats. Information which can be stored, accessed and transmitted through electronic gadgets is called electronic information. The advantages of electronic information resources are mainly in respect of density of storage, speed of access, searchability, integration of text images, pictures and sound on to a single medium and rapid and reliable transmission over long distance.

2. Statement of Problem

The study is an attempt to explore the use of e-information by the users in selected engineering college of libraries of Assam with an objective analysis of the data and at the same time to evolve appropriate strategy so as to overcome the problems encountered in the concerned fields.

The problems that have been identified from the survey are:

i. Users face several problems for locating their required information. Unless and until they are guided by library professionals, their time and effort is not fully utilized.

ii. There is a myth that everything regarding studies is available in internet and can be accessed easily.

iii. Internet is not the ultimate source of information and cannot replace traditional printed resources.

3. Objectives of the Study

The main objective of this study is to analyze the patterns of web-based information resources and their use, the Internet skills of the engineering college community, the perceived impact of the e-resources on their academic efficiency and problems faced by them while retrieving the information in the library.

Besides this, the following are the objectives of the study:

a) Identification of purposes for searching web-based resources in the engineering college libraries of Assam,

b) Detection of the problems faced by the users in accessing e-resources in engineering college libraries, and

c) Analyzing the satisfaction level with the web-based facilities provided by the engineering colleges under study.

4. Area of Coverage

The study concentrated on the most frequent users of Internet and e-resources in the engineering colleges, i.e., the teachers and the students including research scholars. The study also evaluated the data collected from the librarians as well as the users, i.e., students, research scholars and faculty members. The scope of the study is limited to t 5 engineering colleges listed below arranged chronologically:

Table 1: Institutions covered and year of establishment

Sl No.	Name of The Institute	Year of Estd.
1.	Assam Engineering College, Guwahati (AEC)	1955
2.	Jorhat Engineering College, Jorhat (JEC)	1959
3.	National Institute of Technology, Silchar (NITS)	1967
4.	Indian Institute of Technology, Guwahati (IITG)	1994
5.	Girijananda Institute of Management & Technology, Guwahati (GIMT)	2005

5. Population Covered Under Study

The study covered 'Users of the engineering colleges"; therefore, the whole analysis of data is based on designation-wise categorizations of the respondents such as (a) Teacher and (b) Student.

Table 2: Population Covered

Designation	Respondents	Percentage
Teachers	90	30
Students	210	70
Total	300	100

6. Analysis on The Basis of Key Information

6.1 Frequency of using e-resources

Table 3: Frequency of using e-resources

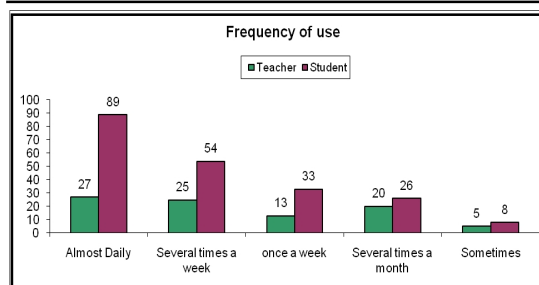| Frequency	Teacher	Student	Total	Percentage
Almost Daily	27	89	116	38.67
Several times a week	25	54	79	26.33
Once a week	13	33	46	15.33
Several times a month	20	26	46	15.33
Sometimes	5	8	13	4.33

Figure 1: Frequency of using e-resources

The Table 3 & Figure 1 indicate the frequency of using e-resources by the respondents. Altogether 116 users (38.67%) use e-resource almost daily followed by Several times a week by 79 (26.33%) users. Individually, 27 (30%) of teachers using e-resources 'almost daily' followed by 'several times a week' by 25 (27.78%) and least 'sometimes' by 5 (5.56%). Again, 89 (42.38%) student were using e-resources 'almost daily', followed by several times a week, 54 (25.71%). In this category, 'sometimes' got least number of users, i.e., 8(3.81%).

6.2 E-Resources access point

Table 4: E-Resources access point

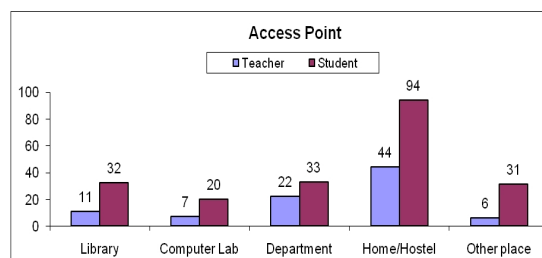| Access Point	Teacher	Student	Total	Percentage
Library	11	32	43	14.33
Computer Lab	7	20	27	9.00
Department	22	33	55	18.33
Home	44	94	138	46.00
Other place	6	31	37	12.33

Figure 2: E-Resources access point

This analysis exhibits the use of e-resources through Internet/Intranet or any other media which could be accessed at various places within the institute or out side the institute. It can be reveled by the evaluation of the services from the library, departments, computer labs, staff accommodation (Hostels/Quarters) inside the campus and from home, cyber shop outside the campus. It has been found that e-resources were used more in home as maximum hits 138 (46.00%) marked by the respondents, followed by department with 55 (18.33%) hits. As far as the library as e-resources access point was concern, it was marked lower as compared to and 'home' and 'department'. The results depict that the library was used little more in accessing the e-resources as compared to other places. Individually, 11 (12.22%) Teachers and 32 (15.24%) Students access from Library leading to a total of 43 (14.33%). (Table 4, Figure 2)

6.3 Purpose of using e-resources among teachers

Table 5: Purpose of using e-resources among teachers

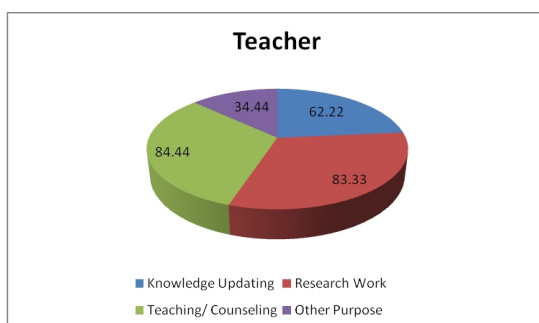| Purpose	Teacher	Percentage
Knowledge Updating	56	62.22
Research Work	75	83.33
Teaching/ Counseling	76	84.44
Other Purpose	31	34.44

Figure 3: Purpose of using e-resources among teachers

Regarding the purpose of using e-resources, it has been found that maximum respondents from Teacher were using e-resources 'teaching/counseling' with 76 (84.44%) hits followed by research purpose, i.e., 75 (83.33%) hits. The data clearly reveals that the knowledge updating factor is the lease effecting cause with 62.22% hits. (Table 5, Figure 3)

6.4 Purpose of using electronic information among students

Table 6: Purpose of using electronic information among students

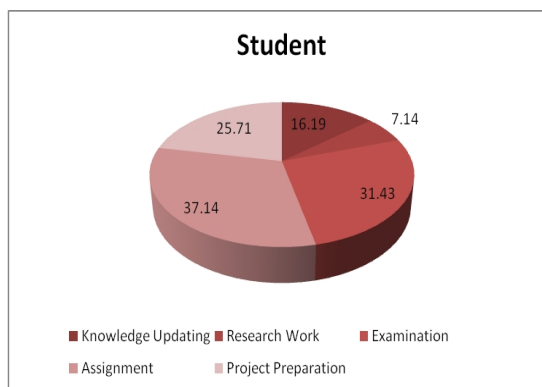| Reason	No of respondents	Percentage
Knowledge Updating	34	16.19
Research Work	15	7.14
Examination	66	31.43
Assignment	78	37.14
Project Preparation	54	25.71

Figure 4: Purpose of using electronic information among students

Similarly, the Students were asked about the usability of electronic information resources as shown in Table, 78 (37.14%) goes to assignment preparation followed by 66 (31.43%) for Examination. The least popular area is Research work by 7.14% students. (Table 6, Figure 4)

6.5 Impact of e-resources on educational activities

The question was asked to the respondents that up to what extent their educational activities affected by the use of e-resources, Data shows that 180 (60%) users believed that their educational efficiency was improved 'considerably' with the use of electronic resources. This category includes 41 (45.46%) teachers and 139 (66.19%) students. A total of 80 (26.67%) users including 35 (38.89%) Teacher and 45 (21.43%) Student were agreed 'up to some extent' their educational work improved. Only fewer i.e. 40 (13.33%) users consisting of 14 (15.16%) Teachers and 26 (12.38%) Students indicated that the use of e-resources did not affect their educational work. (Table 7, Figure 5)

Table 7: Impact of e-resources on educational activities

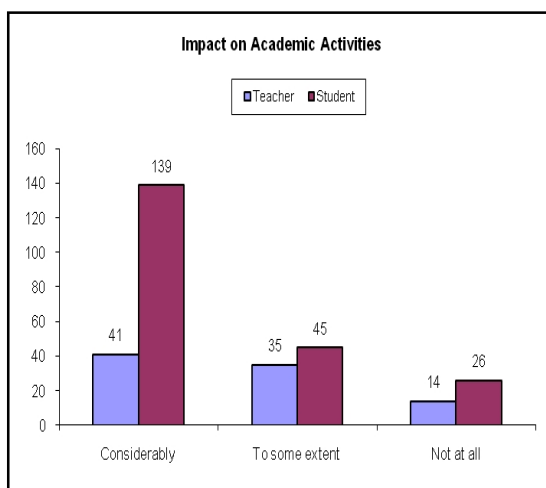| Impact of education	Teacher	Student	Total	Percentage
Considerably	41	139	180	60
To some extent	35	45	80	26.67
Not at all	14	26	40	13.33

Figure 5: Impact of e-resources on educational activities

6.6 Preference (Print or electronic format)

Table 8: Preference (Print or electronic format)

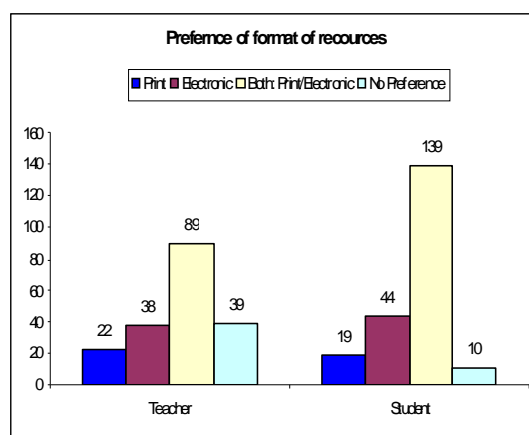| Preference	Teacher	Student	Total	Percentage
Print	12	19	31	10.33
Electronic	21	44	65	21.67
Both: Print/Electronic	38	137	175	58.33
No Preference	19	10	29	9.67

Figure 6: Preference (Print or electronic format)

The availability of electronic resources along with print documents is an advantage for the users because they can use these as per their convenience. The respondents were asked whether they would prefer to use electronic or print or both versions for their students to improve their knowledge. It has been found that the preference for either 'electronic' or 'print' version (21.67% & 10.33% respectively) was low as compared to the choice of using both versions by 175 respondents (58.55%) of total users. Individually, 38 (42.22%) Teachers and 137 (65.24%) Students have chosen "Both" category. However a total of 29 (9.67%) users also responded for No preference also with highest 21.11% by Teachers & lowest 4.67% by Students. (Table 8, Figure 6)

6.7 Sources to reach up to e-resources

Table 9: Sources to reach up to e-resources

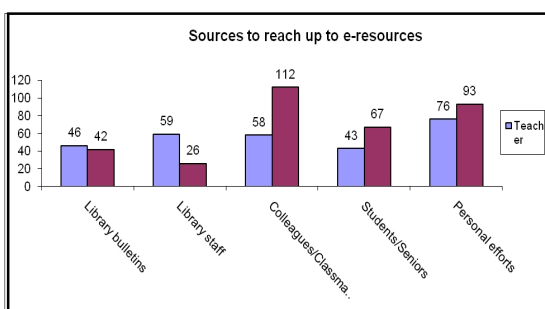| Options	Teacher	Student	Total	Percentage
Library bulletins	46	42	88	29.33
Library staff	59	26	85	28.33
Colleagues/Classmates	58	112	170	56.67
Students/Seniors	43	67	110	36.67
Personal efforts	76	93	169	56.33

Figure 7: Sources to reach up to e-resources

Here the analysis depicts that the maximum respondents (170 hits; 56.67%) got the information from Colleagues/Classmates, followed by personal efforts (169 hits; 56.33%). Through students/seniors, the respondents were also receiving information about e-resources. Surprisingly, few hits also received for library staff (85 hits; 28.33%) and few others also receiving information from library bulletin also (88 hits; 29.33%).

This may also be noted that in the least popular category, maximum recipients are teachers, i.e., 59 in comparison to 26 students. That means students are not very much served by the library staff. (Table 9, Figure 7,8)
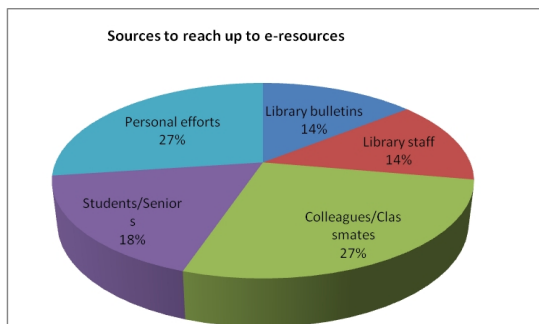

Figure 8: Sources to reach up to e-resources

This data shows that the users are not getting enough support from library side (28% of all hits together for two category) about the availability if e-resources of their need.

6.8 Awareness of statutory/legal provision

Table 10: Awareness of statutory/legal provision

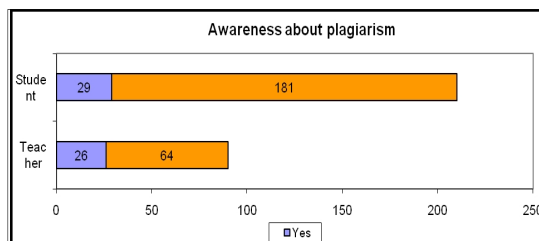| Options	Teacher	Student	Total	Percentage
Yes	26	29	55	18.33
No	64	181	245	81.67

Figure 9: Awareness of statutory/legal provision

The users were asked about legal aspects of provision for keep/access e-resources by the engineering institutions. Unpredictably, maximum respondents i.e. 245 (81.67%) including 64 (71.11%) Teachers and 181 (86.19%) of Students did not have any idea about any legal provision in which the institute has to acquire some e-resources as shown in Table 9, Figure 8. Few respondents 55 (18.33%) (28.89% of

Teacher and 13.81% of Student) said 'yes' but they could not specify the provisions.

6.9 Difficulties in using e-resources

Table 11: Difficulties in using e-resources

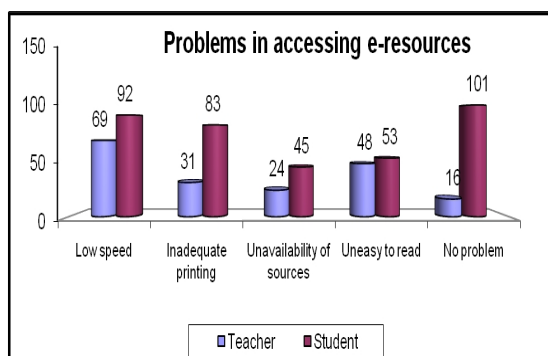| Difficulties	Teacher	Student	Total	Percentage
Low speed	69	92	161	53.67
Inadequate printing	31	83	114	38.00
Unavailability of sources	24	45	69	23.00
Uneasy to read	48	53	101	33.67
No problem	16	101	117	39.00

Figure 10: Difficulties in using e-resources

The respondents were also asked few difficulties in using e-resources. The Table 11 highlights some more problems like lack of high speed connectivity (161 hits, 53.67%), inadequate printing facility (114 hits, 38%), insufficient e-resources in library (69 hits, 23%) and uneasy to read directly from computer screen (64 hits, 16%) while almost 30% respondents said there was no problem in using e-resources (117 hits). This section had multiple hits by a single user. In this section, some diversified data is received. The two categories of users, i.e., teachers and students have completely different views in some points regarding problems faced.

In 'No problem' category, as high as 101 hit is from Students with as low as 16 by Teachers. Thus it shows that Teachers are no comfortable with e-resources and just opposite are Students. (Figure 10)

6.10 Replacement of library services by e-resources

Table 12: Replacement of library services by e-resources

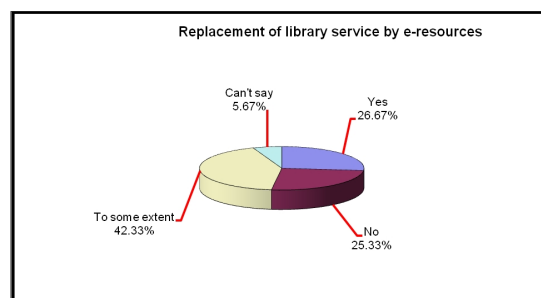| Response	Teacher	Student	Total	Percentage
Yes	23	57	80	26.67
No	34	42	76	25.33
To some extent	24	103	127	42.33
Can't say	9	8	17	5.67
Total	90	210		100

Figure 11: Replacement of library services by e-resources

The respondents were asked can the library services be replaced by e-resources. It shows the opinion of the respondents towards the replacement of library services by e-resources. It has been found that maximum respondents i.e. 127 (42.33%) users including 24 Teachers (26.67%) and 103 Students (49.05%) believed that e-resources may substitute of library services to some extent. Besides, few respondents counting to 25.33% (Teacher 37.78% and Student 20%) believed that library services cannot be replaced by e-resources while a healthy portion

respondents counting to 80 (26.67%) including 25.56% of Teacher and 27.14% of Student are with the view that library services can be replaced by e-resources. It is also revealed that 17 users (5.67 %) can't say anything regarding this matter. This includes 9 teachers and 7 students which count to 10% and 3.8% respectively. (Table 12, Figure 11)

7. Suggestions

The overall finding from this study suggest the following approaches to give more benefits to teachers as well as the students of engineering colleges of Assam:

1. Dedicated Internet Access Section should be made available in Library with minimum 50 computers with latest configuration and multi-media kit for effectively use of e-resources.

2. The bandwidth should be increased to facilitate fast access.

3. Orientation programs for using e-resources should be organized at least once in an year.

4. The Library staffs should be skilled with retrieval technologies to help users to ensure maximum access to e-resources.

5. The library must have printing facility in the internet section where the users may print their important documents.

6. Library webpage should be created separately for better utilization of library services and navigation to web based resources should be given.

7. There should be promotion for using Blogs, RSS feeds, virtual conference, etc. for information communication.

8. The library must have feedback system to analyze the users' experience and problems regularly.

9. The library should have institutional repository pertaining to books and research articles of their respective college staff, and project reports/ thesis/dissertation submitted by their under-graduates, postgraduate students and the research scholars.

8. Conclusion

The Internet has emerged as the single most powerful vehicle for providing access to unlimited information. The e-resources are an inseparable part of today's engineering educational system. The dependency on the web based resources and its services is increasing day by day and the users of engineering colleges too are depending more and more on the Internet for their various educational purposes. The online facility has enabled the teachers and the students to enhance their academic excellence by providing them the latest information and access to the worldwide information. The information on the Internet is not usually available in an organized way and the users are unable to get pin-pointed information from the Internet. In order to make the e-resources more beneficial, the library staff who have acquired a good deal of efficiency in the collection, organization and retrieval of information should feel duty-bound to see that the users are able to obtain right information at the right time. For this, they should organize and classify the information on a website in such a way that the users are able to easily find the information they need for their studies and research purposes. The library services supplemented by web based services can prove a great boon to the users in getting the right information at the right time.

References

1. ARNOLD, J., KACKLEY, R., & FORTUNE, A. Hands-on learning for freshman engineering students. 2003. accessed from http://drum.lib.umd.edu/bitstream/1903/8286/1/ISTL.pdf

2. BHATT, S., & RANA, M. S. E-information usage among engineering academics in India with special reference to Rajasthan State. Library Hi Tech, 2011, 29(3), 496-511. DOI: 10.1108/07378831111174440

3. DORASWAMY, M. Use of digital resources by M.Tech. students in Koneru Lakshmaiah College of Engineering, Vaddeswaram, Andhra Pradesh: a survey , NACLIN(2006), 2006. 154-65

4. HALDER, S. N., & CHANDRA, S. A critical study of the library facilities provided by the private engineering colleges in Kolkata. International Journal of Library and Information Science, 2013, 5(5), 134-139. Accessed from http://www.academicjournals.org/article/article1379697736_Halder%20and%20Chandra.pdf

5. JANGE, S., & Sami, L. K. Influence of Internet on library and information centers of National Institutes of Technology in India. Annals of library and information studies, 2006, 53(4), 184-197. Available at http://nopr.niscair.res.in/bitstream/123456789/7483/1/ALIS%2053%284%29%20184-197.pdf

6. MANESS, J. M. An evaluation of library instruction delivered to engineering students using streaming video. Issues in Science and Technology Librarianship, 2006, 47, 156-163.Accessed from http://www.istl.org/06-summer/refereed.html?a_aid=3598aabf

7. SARAVANAN, T. K. The Economics of an Indian Engineering College Library. Library Philosophy and Practice (e-journal), 2005, 4(2) accessed from http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1049

8. SCHANFFNER, B.L. Electronic resources: a wolf in sheep clothing. College and Research Libraries, 2001, 62 (3), 239-49.

9. WONG, G. K. Look beyond textbooks: information literacy for first-year science students. Issues in Science and Technology Librarianship, 2011, 65. DOI: 10.5062/F45Q4T1S

10. YU, H., & BREIVOLD, S. Electronic resource management in libraries: research and practice. Hershey, PA: Information Science Reference. 2008.

About Authors

Ms. Apurbajyoti Majumdar, Central Library, AssamUnivesity, Silchar.
E-mail: aprubajyoti@gmail.com

Ms. Sharmila Bose Majumdar, DLISc, Gauhati University, Assam
E-mail: sharmi.wb@gmail.com