University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Spring 2006

Internet Use by Teachers and Students in Engineering Colleges of Punjab, Haryana, and Himachal Pradesh States of India: An Analysis

Rajeev Kumar
Shaheed Bhagat Singh College of Engineering and Technology

Amritpal Kaur
Guru Nanak Dev University

Electronic Journal of Academic and Special Librarianship

v. 7 no. 1 (Spring 2006)

Internet Use by Teachers and Students in Engineering Colleges of Punjab, Haryana, and Himachal Pradesh States of India: An Analysis

Rajeev Kumar, Library Assistant
Shaheed Bhagat Singh College of Engineering & Technology, Ferozepur, India

Dr. Amritpal Kaur, Reader and Head of the Department of Library and Information Science
Guru Nanak Dev University, Amritsar, India

Abstract

The aim of this study is to analyze the use of the Internet and related issues among the teachers and the students of engineering colleges in India's three States viz. Punjab, Haryana and Himachal Pradesh. A well-structured questionnaire was distributed among the 1980 teachers and students of all the engineering colleges of the three states of India under study. The response rate was 80.9 percent. The present study demonstrates and elaborates the various aspects of Internet use, such as frequency of Internet use, methods used for learning of Internet skill, most frequently used place for Internet use, purposes for which the Internet is used, use of Internet services, ways to browse the information from the Internet, problems faced by the users and satisfaction level of users with the Internet facilities provided in the college. The result of the survey also provides information about the benefits of the Internet over conventional documents. The study was conducted particularly to find an answer to the question: Can the Internet replace library services? It was found that the Internet has become a vital instrument for teaching, research and learning process of these respondents. Some suggestions are set forth to make the service more beneficial for the academic community of the engineering colleges under study.

Introduction

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. This paper is based on a survey given to teachers and student of engineering in colleges and universities in three states of India. This paper discusses the findings of the study.

Literature review

A review of literature reveals that the teachers and the students are the most frequent users of the Internet. They use the Internet mainly for educational purposes rather than for entertainment. Becker (1998) conducted a study on the Internet use by 2,500 teachers from public and private schools of U.S. The study revealed that 90% of the teachers had Internet access. A majority of the teachers with 59% response had Internet access at home. A majority of the teachers (68%) used the Internet to find information resources for preparing their lessons. A majority of the teachers with 62% response used Web search engines to find information resources. Bavakutty and Salih (1999) conducted a study at Calicut University which showed that students, research scholars, and teachers used the Internet for the purpose of study, research and teaching, respectively. Laite (2000) surveyed 406 graduate and undergraduate students from Shippensburg University. The survey revealed that 57.6% of the undergraduate students used the Internet 1-2 times per week and another 37.1% used it 1-2 times daily. 54.7% of the graduate students used Internet 1-2 times per week and 37.7% used it 1-2 times daily. The survey showed that the most used Internet service was e-mail. 100% of the graduates and undergraduate students used e-mail services. Jagboro (2003) conducted a case study of Internet usage in Nigerian universities. The objective of this study was to evaluate the level of utilization of the Internet for academic research at the Obafemi Awolowo University, Ile-Ife, Nigeria. Questionnaires were administered to postgraduate students spanning art and science based programmes. The results from the analysis of the responses showed that the respondents ranked the use of research materials on the Internet fourth (17.3%). However, respondents who used the Internet ranked research materials second (53.4%) to e-mail (69.9%). The study concluded that the use of the Internet for academic research would significantly improve through the provision of more access points at departmental and faculty levels. Panda and Sahu (2003) conducted a study of the engineering colleges of Orissa. The study revealed that 50% of the engineering colleges used dial-up connection. A majority of the colleges used the Internet to provide on-line demonstrations. Hanauer (2004) surveyed a diverse community college to assess the use of the Internet by the students. The survey showed that although all the students surveyed had free Internet access through their community college, only 97% of the students reported having access to the Internet. The survey

showed that 83% of Internet users had access to Internet at their home and 51% of the respondents accessed the Internet at their college or library. 81% of the students reported to access the Internet most for college work and 80% for e-mail/chat. Mishra, Yadav and Bisht (2005) conducted a research study to learn the Internet utilization patterns of undergraduate students at the G B Pant University of Agriculture and Technology, Pantnagar. The findings of the study indicate that a majority of the students (85.7%) used the Internet. The findings of the study also showed that 61.5% of the males and 51.6% of the females used the 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 connections. Robinson (2005) examined the 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 African-American college students (76%) had used the Internet for more than three years. The use of the Internet for most African-American college students occurred at school or at the work place with 49% of the responses at home. 47% of the responses indicated they spent an average of two hours per day on-line. A small percentage of the students spent 5-6 hours per day on the Internet. 43% of the students used the Internet primarily to learn and find school resources.

The ever-increasing number of people accessing the Internet coupled with recent explosion of information resources on the Internet, may have considerable implications for teaching, learning and research. Teachers and students are depending more and more on the Internet for their various educational purposes. The present survey is, therefore, an attempt to assess the effectiveness of the Internet as an educational tool, and what role it actually plays in the educational system with special reference to the engineering colleges in the states of Punjab, Haryana and Himachal Pradesh.

Objectives/Aims

The main objective of this study is to analyze the patterns of Internet use, the Internet skills of the engineering professionals, the perceived impact of the Internet on their academic efficiency and problems faced by them while using the Internet. This survey was particularly conducted to assess the benefits of the Internet over conventional resources of information and to find the answer to the question: Can Internet replace library services? Besides this the following information was sought about the teachers and the students:

- various purposes for which the Internet is used;
- various Internet services used for teaching, learning and research;
- impact of the Internet on the teaching, learning and research;

3

- satisfaction with the Internet facilities provided by the engineering colleges under study.

Methods

All the engineering colleges of the three States under study were visited personally by the investigator to collect data from the respondents. The questionnaires for Internet users were filled up by the teachers and the students of the engineering colleges. A total sample of 792 teachers and 1188 undergraduate students was taken up for the present study.

For sampling, random sampling process was followed for data collection after consulting experts on statistics. The sample was random in the sense that the teachers and the undergraduate students were randomly selected from 66 engineering colleges of India's three States viz. Punjab (including Chandigarh), Haryana and Himachal Pradesh.

Thirty respondents were selected randomly from each college taking at least five (two teachers and three undergraduate students) from each branch of each college under study. Accordingly, 1,980 questionnaires (i.e. 66 x 30 = 1980) were distributed among the teachers and undergraduate students of the engineering colleges under study out of which 1,603 (i.e. 658 from the teachers and 945 from the students) were received back duly filled in.

Respondent profile

Out of the 1603 respondents, 658 (41.0 percent) were teachers and 945 (59.0 percent) were students. Of the respondents 1,144 (71.4 percent) were male and 459 (28.6 per cent) were female. 622 of them (38.8 percent) were aged 15-20, 599 (37.4 per cent) were 21-25, 252 (15.7 percent) were 26-30, 67 (4.7 percent) were 31-35, 39 (2.4 percent) were 36-40, 18 (1.1 percent) were 41-45, and 6 (0.4 per cent) were 46 years or over. There were 808 respondents (50.4 percent) from Punjab state, 720 (44.9 percent) were from Haryana state and 75 (4.7 percent) were from Himachal Pradesh respectively. 40 (2.5 percent) respondents were from Applied Sciences, 42 (2.6 percent) were from Chemical Engineering, 320 (19.9 percent) from Computer Science & Engineering, 331 (20.6 percent) were from Electronic Engineering, and 175 (10.9 percent) were from Electrical Engineering. In addition to above 10 (0.6 percent) respondents were from Industrial Engineering, 20 (1.2 percent) were from Production Engineering, 247 (15.4 percent) were from Mechanical Engineering, 235 (14.7 percent) were from Information Technology, 58 (3.6 percent) were from Architecture Engineering, 75 (4.7 percent) were from Instrumentation & Control Engineering, 20

(1.2 percent) were from Bio Technology, 10 (0.6 percent) were from Food Technology and 20 (1.2 percent) were from Textile Engineering.

Results

Table 1. Experience of Internet Use

	Frequency	Percentage
Less than 6 months	106	6.6
6 months – 1 year	157	9.8
1-2 years	449	28.0
2-4 years	502	31.3
More than 4 years	389	24.3

Note: n = 1603

The question was asked to find out the facts such as when did the users start using the Internet and how long they had been using the Internet. It was found that 502 (31.3 percent) of them had been using the Internet for 2-4 years. Another 449 (28.0 percent) respondents had used it for 1-2 years; 389 (24.3 percent) respondents indicated having used it for more than 4 years; 157 (9.8 percent) respondents had used it for 6 months – 1 year, and 106 (6.6 percent) respondents had been using it for six months or less. It is evident that the majority of respondents have been using Internet an average for more than 2 years (Table 1).

Table 2. Frequency of Internet Use

	Frequency	Percentage
Daily	699	43.6
2-3 times a week	781	48.7
2-3 times a month	86	5.4
Once in a month	37	2.3

Note: n = 1603

Another question pertained to the frequency with which respondents use the Internet. A total of 781 (48.7 percent) of them reported that they used it 2-3 times in a week, 699 (43.6 percent) indicated that they used the Internet every day, 86 (5.4 percent) used it 2-3 times in a month, while 37 (2.3 percent) respondents reported that they

used it once in a month. Again, this indicates that most of them use it 2-3 times in a week (Table 2).

Table 3. Amount of Time Spent on the Internet		
	Frequency	**Percentage**
Less than 1 hour a week	82	5.1
2-4 hours a week	541	33.7
5-6 hours a week	408	25.5
7-9 hours a week	302	18.8
10-20 hours a week	167	10.4
More than 20 hours a week	103	6.4

Note: n = 1603

Table 3 shows that the maximum number of respondents i.e. 541 (33.7 percent) use the Internet for 2-4 hours a week. 408 (25.5 per cent) use the Internet for 5-6 hours, 302 (18.8 percent) for 7-9 hours, 167 (10.4 percent) for 10-20 hours and 103 (6.4 percent) for more than 20 hours a week. Only 82 (5.1 percent) respondents have indicated that they use Internet for less than one hour a week.

Table 4. Most Frequently Used Location of Internet Use		
Place	**Frequency**	**Percentage**
College or work place	1060	66.1
Home	310	19.3
Other places	233	14.6

Note: n = 1603

A total of 1,060 respondents (66.1 percent) indicated that they accessed the Internet from their college or workplace, while only 310 (19.3 percent) accessed the Internet from home. Another 233 (14.5 per cent) also used other places such as cyber cafe, friend/ colleague's home etc. for accessing the Internet. It indicates that most of the respondents use the Internet from their respective colleges (Table 4).

Table 5. Methods of Learning Internet Skills		
Method	**Frequency**	**Percentage**
Trial and error method	1194	74.5

6

Guidance from colleagues and friends	1094	68.3
Training from college	110	6.9
Self instruction	882	55.0
External courses	133	8.3

Respondents were asked to indicate the methods used for acquiring the Internet skills. It was found that most popular method of acquiring the necessary skills to use Internet is via trial and error method (Table 5). A majority of the respondents used this method with 1,194 (74.5 percent) responses. A total of 1,094 of them (68.3 percent) indicated that they took guidance from their colleagues and friends, while more than half of the respondents with 882 (55.0 percent) responses also acquired skill by self instruction method. 110 (6.9 percent) of users learnt the Internet through formal training offered by the college and 133 (8.3 percent) participated in other training courses such as external courses and workshops.

Table 6. Purposes for Browsing Internet

Purpose	Frequency	Percentage
Research	814	50.8
Entertainment	484	30.2
Education	1157	72.2
Communication	794	49.5

One of the significant research questions was to explore the purpose for which they are using the Internet. 1157 (74.2 percent) respondents used the Internet for an educational purpose, 814 (50.8 percent) respondents for the research purpose, 794 (49.5 percent) for the communication purpose, while as 484 (30.2 percent) respondents admitted that they also use Internet for entertainment purpose. It indicates that majority of respondents mainly uses the Internet for educational purpose compared to others and least number of respondents uses the Internet for entertainment purpose (Table 6).

Table 7. Use of Internet Services

Internet Services	Frequency	Percentage
Electronic Mail	1601	99.9
World Wide Web	1587	99.0

Search Engine	1584	98.8
Telnet	561	35.0
File Transfer Protocols	629	39.2
Archie	241	15.0
List Serves/Discussion Groups	276	17.2
Bulletin Board Services	413	25.8
Frequently Asked Questions	814	50.8
Chatting	1187	74.0

Another question was related to the use of various Internet services by the respondents. Table 7 shows that among Internet services, electronic mail has been chosen as the most popular Internet service. It is being used by 1,601 (99.9 percent) respondents. Browsing of Internet for the World Wide Web comes next. This is being used by 1,587 (99 percent) respondents. Next in order come search engines with 1,584 (98.8 percent) responses, chatting with 1187 (74 percent) responses, FAQs (Frequently Asked Questions) with 814 (50.8 percent) responses, FTP (File Transfer Protocol) with 629 (39.2 percent) responses, telnet with 561 (35 percent) responses, BBS (Bulletin Board Services) with 413 (25.8 per cent) responses, listservs/ discussion groups with 276 (17.2 percent) responses, and archie with 241 (15 percent) responses. It is seen that use of archie and listservs/ discussion groups is very low among the Internet users (Table 7).

Table 8. Problems While Using Internet		
Problem	**Frequency**	**Percentage**
Slow Internet access speed	1203	75.0
It takes too long to view/download Web pages	391	24.4
Difficulty in finding relevant information	347	21.6
Overload of information on the Internet	327	20.4
Privacy problem	278	17.3

It can be inferred from Table 8 that using the Internet is not free from problems. The barriers or problems encountered while using the Internet mainly come from five factors: slowness of network communication or slow access speed; it takes too long to view Web pages/ download pages; difficulty in finding relevant information; overload

of information on the Internet; and the privacy problems. 1,203 (75 percent) respondents face the problem of slow Internet access speed which takes a lot of their slot time to retrieve the relevant information. 391 (24.4 percent) respondents are of the opinion that it takes too long to view Web pages/ download pages. 347 (21.6 percent) respondents find it difficult to get the relevant information from the Internet. 327 (20.4 percent) respondents report that they face the problem of overload of information on the Internet. 278 (17.3 percent) respondents face the privacy problem on the Internet.

Table 9. Ways to Browse Information from the Internet

Ways	Frequency	Percentage
Type the Web address directly	628	39.2
Use of search engines	1341	83.7
Use of subscription databases	56	3.5

Table 9 exhibits that a majority of the respondents with 1341 (83.7 percent) responses browse the required information from the Internet by using Internet search engines. 628 (39.2 percent) respondents admit that they type the Web address directly for browsing information and only 56 (3.5 percent) respondents indicate that they use subscription databases for getting the required information from the Internet.

Table 10. Comparison of Conventional Documents and Internet

Internet is:	Frequency	Percentage
Time saving	1435	89.5
More informative	1350	84.2
More useful	1279	79.8
Less expensive	1157	72.2
More preferred	1125	70.2

Table 10 shows that1,435 (89.5 percent) respondents are of the opinion that Internet is time saving as compared to conventional documents. A majority of the respondents i.e. 1,350 (84.2 per cent) feel that the Internet is more informative as compared to conventional documents. Internet is preferred for being less expensive by the respondents with 1,157 (72.2 percent) responses. 1,279 (79.8 percent) respondents feel that Internet is more useful than conventional documents. Respondents opt

'Internet is preferred' (or more liked) with 1,125 (70.2 percent) responses as compared to conventional documents.

Table 11. Influence on Academic Efficiency		
Influence	**Frequency**	**Percentage**
Use of conventional documents decreased	573	35.7
Dependency on Internet increased	832	51.9
Expedite the research process	411	25.6
Improved professional competence	718	44.8

The information available on the Internet has proved to be a great asset for many of the respondents. They have been able to keep themselves abreast with the latest information and improve their professional competence. Table 11 depicts the influence of Internet on academic efficiency of the respondents. 832 (51.9 percent) respondents think that due to the availability of latest and instant access to information on the Internet, dependency on Internet has increased. 718 (44.8 percent) respondents feel that the Internet has improved their professional competence. 573 (35.7 percent) respondents think that dependency on conventional documents has decreased and 411 (25.6 percent) respondents admit that the Internet has expedited their research process.

Table 12. Satisfaction with Internet Facilities		
	Frequency	**Percentage**
Fully	531	33.1
Partially	788	49.2
Least satisfied	211	13.2
No comments	73	4.6

Note: n = 1603

Table 12 shows that only 531 (33.1 percent) respondents feel fully satisfied with the Internet facilities, 788 (49.2 percent) partially satisfied, 211 (13.2 per cent) least satisfied and 73 (4.6 percent) have not expressed any opinion regarding the service.

Table 13. Can Internet Replace Library Services?		
	Frequency	**Percentage**
Yes	1243	77.5

No	143	22.5

Note: n = 1603

A majority of the respondents i.e. 1,243 (77.5 percent) feel that the Internet cannot replace library services and that it only supplements the library services. They think that both Internet and library are sources of information but Internet is more effective, more useful and more informative it provides desired information in less time. They also think that they can use Internet to access all the syllabi material, books and journals from the respected Website along with the facility of FAQs (Frequently Asked Questions). Only 143 (22.5 percent) respondents feel that Internet can replace library services because they find that it is easier to locate the desired information on the Internet than in the library. So it is concluded that Internet cannot replace library services. It can only supplement library services (Table 13).

Suggestions to Improve Internet Services

Based on the findings of the study, the following suggestions are put forward to improve the use of the Internet among the teachers and the students in all the engineering colleges of Punjab, Haryana and Himachal Pradesh states of India:

- The timings of the Internet service should be increased and if possible, the service should be made available round the clock so that the users can make maximum use of the Internet facility.
- More computers with the latest specifications and multimedia kit should be installed so that the users can use Internet telephony, video-conferencing, chatting and other useful services of the Internet.
- More efficient technical staff should be appointed and they should always be present in the Internet section for expert advice.
- There should be complete campus networking with the Internet browsing facility connecting the teachers' rooms as well as hostels.
- The problem of slow connectivity should be overcome by increasing the bandwidth.
- Sites providing only entertainment should be locked so that the students should not unnecessarily use computers.
- Printing facility should be provided in the Internet Sections of the colleges so that the users can get printouts of their study material and other important documents at nominal rates.
- Some orientation training progammes should be organized by the colleges at regular intervals so that the maximum users can improve their excellence or proficiency in the use of the Internet for academic purposes.

- All the academic news should be provided at the college Website and it should be regularly updated.
- Information regarding the popular and the latest Websites with their addresses should be displayed on the Notice Board in the Computer Centre.
- Capacity of servers should be increased and firewalls should be installed for protection from viruses.
- V-SAT connectivity should be used for maximum speed.
- ISDN line/ Fiber communication with high bandwidth should be implemented for faster access.
- Internet facility should be made familiarized to all.

Conclusion

The Internet has emerged as the single most powerful vehicle for providing access to unlimited information. The Internet is an inseparable part of today's engineering educational system. The dependency on the Internet 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 Internet 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 Internet 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 find easily the information they need for their studies and research purposes. The library services supplemented by Internet services can prove a great boon to the users in getting the right information at the right time.

The present study has concentrated on the most frequent users of Internet in the engineering colleges i.e. the teachers and the students. The scope of the study was limited to the engineering colleges of Punjab, Haryana and Himachal Pradesh states of India.

There is a vast scope for future research in different types of users' behaviour and comparison of users' behaviour and attitudes towards the Internet.

The use of the Internet is an evolving phenomenon at this stage. Its use in the colleges under study still seems to be in a state of infancy or early maturation. We can very well visualize a situation when all the 100% users will have achieved a near perfection

in the use of and full dependency on the Internet for their information needs. What kind of fulfillments they then achieve, what kind of problems they come to face and what kind of new demands the system generates in them, will be a matter of far greater interest than it seems today. So still there is a vast scope of future research in different types of users' behaviour and comparison of users' behaviour towards the Internet.

References

Bavakutty, M., and T. K. Salih Muhamad. (1999). Internet Services in Calicut University. Conference, *Academic Libraries in the Internet Era.* Ahemdabad, India: Proceedings of the 6th National Convention on Academic Libraries in the Internet Era. pp37-44.

Becker, Henry Jay. (1998). Internet Use by Teachers. Retrieved June 26, 2004, from http://www.crito.uci.edu/TLC/findings/Internet-Use/startpage.html.

Hanauer, David. (2004). Internet Use among Community College Students: Implications in Designing Healthcare Interventions. *Journal of American College Health*, v52, i5, pp197-202.

Jagboro, K. O. (2003). A Study of Internet Usage in Nigerian Universities: A Case Study of Obafemi Awolowo University, Ile-Ife, Nigeria. *First Monday,* v8, i2. Retrieved June 26, 2004, from http://firstmonday.orgissues/issue82/jagboro/index.html.

Laite, Berkley. (2000). Internet Use Survey: Analysis. Retrieved May 21, 2004, from http://www.ship.edu/~bhl/survey/.

Mishra, O. P. Neelam Yadava, and Kamini Bisht, (2005). Internet Utilization Pattern of Undergraduate Students. *University News* v43, i13, pp8-12.

Panda, K. C. and N. K. Sahu. (2003). Use of Internet in the Engineering Colleges of Orissa: An Analysis. Conference, *Mapping Technology on Libraries and People.* Ahemdabad, India: Proceedings of the 1st International Conference on Mapping Technology on Libraries and People. pp619-631.

Robinson, Jannie W. (2005). Internet Use among African-American College Students: An Exploratory Study. Retrieved 9 August, 2005, from http://wwwlib.umi.com/dissertations/fullcit/3156015.

Appendix I

List of Engineering Colleges of Punjab, Haryana and Himachal Pradesh States of India	
Sr. No.	**Engineering Colleges of Punjab State (Including Chandigarh)**
1.	Adesh Institute of Engineering & Techonology, Faridkot
2.	Amritsar College of Engineering & Technology, Amritsar
3.	Baba Banda Singh Engineering College, Fatehgarh Sahib
4.	Beant College of Engineering & Technology, Gurdaspur
5.	Bhai Gurdas Institute of Engineering & Technology, Sangrur
6.	Bhai Maha Singh College of Engineering, Muktsar
7.	Chandigarh Engineering College, Mohali
8.	Chandigarh College of Architecture Engineering, Chandigarh
9.	Chitkara Institute of Engineering. & Technology, Patiala
10.	College of Engineering and Management, Kapurthala
11.	D.A.V. Institute of Engineering and Technology, Jalandhar
12.	Dr. B.R. Ambedkar Regional Engineering College, Jalandhar
13.	GGS College of Modern Technology, Kharar, SAS Nagar
14.	Giani Zail Singh College of Engineering & Technology, Bhatinda
15.	Guru Gobind Singh College of Engineering, Talwandi Sbo
16.	Guru Teg Bahadur Khalsa Institute of Engineering & Technology, Malout
17.	Guru Nanak Dev Engineering College, Ludhiana
18.	I.I.T.T. College of Engineering, Pojewal Distt., Nawanshahar
19.	Institute of Engineering & Technology, Ropar
20.	Lala Lajpat Rai Institute of Engineering & Technology, Moga.
21.	Lovely Institute of Technology, Distt. Kapurthala
22.	Ludhiana College of Engineering & Technology, Ludhiana
23.	Malout Institute of Management & Information Technology, Malout
24.	Punjab College of Engineering & Technology, Patiala
25.	Punjab Engineering College, Chandigarh

26.	Rayat Institute of Engineering & Information Technology, Nawanshahar
27.	S.B.S. College of Engineering & Technology, Ferozepur
28.	Sant Longowal Institute of Engineering & Technology, Longowal
29.	Shaheed Udham Singh College of Engineering & Technology, Mohali
30.	Sri Sai College of Engineering & Technology, Pathankot
31.	Sukhmani Institute of Engineering & Technology, Dera Bassi
32.	Thapar Institute of Engineering & Technology, Patiala
Engineering Colleges of Haryana State	
33.	Al-Falah School of Engineering & Technology, Faridabad
34.	Ambala College of Engineering and Applied Research, Ambala
35.	Anupma College of Engineering , Gurgaon
36.	Apeejay Engineering College, Sohana, Gurgaon
37.	B.M. Institute of Engineering & Technology, Sonepat
38.	B.R.C.M. College of Engineering & Technology, Bhiwani
39.	B.R. Anagpuria Institute of Technology & Management, Faridabad
40.	C.R. State College of Engineering, Murthal
41.	Career Institute of Technology & Management , Faridabad
42.	DAV College of Engineering & Technology, Mohindergarh
43.	Doon Valley Institute of Engineering & Technology, Karnal
44.	Dronacharya College of Engineering, Gurgaon
45.	Guru Jambeswhar University Instistute of Engineering & Technology, Hissar
46.	Haryana College of Technology & Management, Kaithal
47.	Haryana Engineering College, Jagadhari
48.	Hindu College of Engineering, Industrial Area, Sonepat
49.	Institute of Technology & Management, Gurgaon
50.	Jind Institute of Engineering & Technology, Jind
51.	Lingaya's Institute of Managment & Technology,Faridabad
52.	M.M. Engineering College, Ambala

53.	N.C. College of Engineering, Panipat
54.	P.D. Memorial College of Engineering, Jhajjar
55.	Regional Engineering College, Kurukeshetra
56.	Seth Jai Parkash Mukand Lal Institute of Engineering & Technology, Yamuna Nagar
57.	Shri Baba Mastnath Engineering College, Rohtak
58.	Shri Krishna Institute of Engineering & Technology, Kurukshetra
59.	Somany Institute of Technology & Management, Rewari
60.	Swami Devi Dyal Institute of Computer & Information Technology, Panchukula
61.	Technological Institute of Textiles, Bhiwani
62.	Vaish College of Engineering, Rohtak
63.	YMCA Institute of Engineering & Technology, Faridabad
Engineering Colleges of Himachal Pradesh	
64.	I.I.T.T. College of Engineering, Sirmaur
65.	Institute of Engineering. & Emerging Technology, Baddi
66.	Regional Engineering College, Hamirpur

Appendix II

Questionnaire for Internet Users

Back to Contents

http://southernlibrarianship.icaap.org/content/v07n01/kumar_r01.htm.