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Student Practices on Internet in Engineering Colleges in the District Solan, Himachal Pradesh (India)

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ABSTRACT

An essential element of Internet literacy for college students is the ability to locate, select, evaluate, synthesize, and cite sources in their study. This study began with the assumption that there are stumpy Internet competency and a big digital divide among the students in the engineering colleges in Solan District of Himachal Pradesh, (India). A survey was conducted to know the student practices on Internet. A questionnaire was designed and distributed to 480 students. After filling up, a total of 424 questionnaires with a response rate of 87.2% were received. The objective of this study was to identify the preferred criteria of using the Internet in the engineering colleges. This paper examines the digital competencies of the students and discusses on different aspects of Internet usage. However, the study limits only a few colleges, yet it represents an overview of the real condition and impact in broader prospects.

1. INTRODUCTION

The Internet has emerged as the most powerful tool for an instant access to information where information is just a 'finger touch' away from the end user and it has become the biggest global digital information library that provides the fastest access to information promptly at anywhere and anytime (Kumar and Kaur 2005). It influenced the information seeking behavior of users, where maximum information gained through online sources rather through the conventional information sources. According to Luambano and Nawe, 2004,The Internet enables access to a wide range of information, such as up to date research reports, current trends, etc. for the scholars. Academic institutions disseminate information amongthe audience around the globe through web sites and provides a way to search and organize output (Biradar, et al. 2006). There are various search techniques available that help to find the most precise and relevant information. In this study, an attempt has been made to know what the techniques of information searching and retrieval are being used by the students among the engineering colleges. Madhu Rani (2007) revealed that Boolean logic, truncation, and wildcards are the most often used search techniques, while web directories, subject gateways are least used navigational tools for information retrieval. An academic library can play an important role to make the student aware of the Internet searching techniques. Particularly, by organizing orientation and information literacy programs on how to access electronic resources. Faizul Nisha and Ali, (2013) in a study originated that most of the users were aware of e journals and they were not only using them for building and updating their knowledge but also for collecting relevant material for their study and research. Further, Faizul Nisha and Ali, (2013) also found that aim of consulting electronic journals includes: retrieving information to publish their research papers and manuscripts, assignments, presentations, seminars, and largely to update their knowledge. The study focused on finding out challenges, issues and problems associated with Internet use and discussing remedies. Use of Internet in the educational institutes comprises several problems and influences. Madhusudhan (2007); and Faizul and Ali (2013) discussed that slow Internet speed, inadequate computers with Internet facilities, fatigue and lack of training, etc. are

the major problems associated with the use of Internet. The purpose of this paper is to analyze the techno-educational background of the district.

Although engineering colleges are playing a significant role in imparting technical education in the region and the students in undergraduate engineering colleges have extensive exposure to technology, yet many students do not gain proficiency especially in computer technologies. The recent technological changes forced to adopt the new technologies in education. The origin of smart classrooms, interactive- online discussions, and online submission of an assignment, etc. are usual for a student nowadays, therefore, the educators would expect from the students to be technologically proficient (Kumber and Shirur, 2003). The study reveals how the region influenced with these changes, especially in engineering education. In the era of information explosion, students are depending more and more on the Internet resources for their educational needs and spending a considerable amount of their time for teaching, learning and research on The Internet. Even, the government offering considerably good financial assistance to the educational institutions and these colleges also invest a good amount on Internet facilities from their budget. In this situation, the study seems relevant to find out role, importance and how the internet is being used by these institutions. Therefore, the investigation focused on the students enrolled in the Engineering intuitions in Solan, a district in Himachal Pradesh (India) that came into existence on 1st September 1972. During last decade, several private and public educational institutes came into existence, serving the society and imparting education. (H.P.Govt. http://himachal.gov.in/).

2. SCOPE OF THE STUDY

The present study covered the following engineering colleges offering degree level courses and functioning within the jurisdiction of the State of Himachal Pradesh (India), particularly in the district Solan. The four educational institutes namely *Green Hills Engineering College* (GHEC), *L.R. Institute of Engineering and Technology* (LRIET), *Baddhi University* (BU), and *Shoolini University* (SU) were selected for the study. Since these institutions have good reputation and impact on the local regional population. Moreover, these institutes setting up bench marks in the

Table 1. Profiles of the Engineering Institutes under Study

S. No.	Name of College	Year of Establishe ment	Address	Website	Email
1	Green Hills Engineering College, Gandhi gram, Kumarhatti, Nahan Road, P.O. Bohli,Distt. Solan (HP)	2003	Nahan Road, Gandhigram, Kumarhatti P.O. Baholi, District Solan – 173229 Himachal Pradesh, India Telephone: +91-1792-645771-72, 266772-73, 266097, Fax: +91-1792-266086	http://www.ghec.co.in	E-mail: contact@ghec.co.in
2	L.R. Institute of Engineering & Technology, Village Jabli-Kyar, P.O. Oachghat, Sultanpur Road, Distt. Solan. (H.P.)	2004	Village Jabli Kyar, PO Oachghat, Distt. Solan H.P. Contact No: 01792-252851,252852	http://www.lrinstitutes.com/edabt.php	info@lrinstitutes.com
3	School of Engineering & Emerging Technologies (SEET) Baddi University	2002	Baddi, Distt. Solan, PIN: 173205 Himachal Pradesh, India Contact No: 01795-247353, 247884 Fax No. 01795-247352	http://www.baddiuniv.ac.in/	registrar@baddiuni.ac.in
4	Institute of Engineering and technology. Shoolini University	2012	Bajhol,Solan-Oachghat-Kumarhatti HighwayPost Box 9, Head Post Office, The Mall,	http://shooliniuniversity.com/	info@shooliniuniversity.com

Engineering education, therefore, these were selected for the present study. The brief profiles and the subject branches offered by these institutes are given below in Table1 and Table 2 respectively.

Table 2. Engineering Branches offered by the Institutes of Study

S. No.	Course	Name of Institutes			
		GHEC	LRIET	BU @	SU
i	Applied Sciences	A	A	A	-
ii	Bioinformatics	-	-	-	A
iii	Biotechnology	-	-	-	A
iv	Civil Engineering	A	A	A	A
v	Computer Application	-	-	A	-
vi	Computer Science	A	A	A	A
vii	Electrical Engineering	A	A	A	A
viii	Electronic and Communication	A#	A	A	A
ix	Food Technology	-	-	-	A
x	Information Technology	A	-	A	-
xi	Mechanical Engineering	A	A	A	A
xii	Nanotechnology	-	-	-	A
	Total	07	06	08	09

Electronic Engineering, @ Under School of Engineering and Emerging Technologies (SEET), A= Available.

3. OBJECTIVES

The present study is an attempt to find out the pattern of using the Internet to the students of engineering colleges. The study was conducted with the following objectives:

1. To know the frequency, time consumed and periodicity of using the Internet by the students in engineering institutesin the district under study.
2. To identify the Internet resources, services and search techniques used to accessthe internet.
3. To identify the purpose, tools and the most preferred internet browser and preferred location using to access the internet.
4. To examine the influence of Internet on students and satisfaction from the available facilities and infrastructure for internet facility.
5. To identify the problems encountered by the students using the Internet.

4. RESEARCH METHODOLOGY ADOPTED

Students of the Bachelor of Technology (B. Tech.), Master of Technology (M. Tech.) and Ph.D. Research Scholars studying under different subject branches at the *Engineering* institutes in district Solan of Himachal Pradesh was the population for this study. Since it was a large population, hence, the random sampling was adopted to collect data for the study. The received data has been processed, analyzed and presented in the tabulation form. The study is based on survey methods of research, conducted using questionnaire and interviews. A questionnaire was administered to a convenience sample of 480 undergraduate, postgraduate students and Ph.D. scholars. Total 120 respondents were randomly selected from each Engineering college under study. Questionnaires were distributed physically and the duly filled questionnaires were received from the respondents from January 2015 to June 2015. A total of 424 duly filled questionnaires with a response rate of 88.4% were received from the respondents. Since the region is geographicallyscattered, therefore, wherever required, e-mail notifications, interviews and schedule for thesurvey were also used to get requisite information. It is stated that for the convenient of the study, the words respondents, users and students while the words institutes, colleges, and university are used interchangeably in this study.

5. ANALYSIS,INTERPRETATION, AND DISCUSSION

I. RESPONDENT DEMOGRAPHY

The study covered the students of *engineering* institutes available in the district Solan, Himachal Pradesh, India. The limitations of this study include the use of a convenience sample, and the unequal representation of gender *(Male = 63.4%, Female = 36.6%).* The analysis of the responses received from the sample population is given below under subsequent Tables. The gender wise distribution is given in Table 3.

During the analysis of responses, the categories of the users were identified and presented in Table 3. The table reveals that 51.6% respondents were *Under Graduate*, while 36.5% were *Post Graduate*, whereas 11.9% were *Research Scholars* among the population selected randomly. A total of 63.6% respondents were *Male* while 36.6% were *Female* respondents who participated in this study. In the continuation, the subject branch wise details of the respondents were also identified which is given below in Table 4.

Table 3. Category and Gender –wise breakup of Respondents

S. No.	Category	Name of Institutes								Grand Total			Percentage
		GHEC		LRIET		BU		SU					
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Category	
i	UG Students	45	10	25	16	47	17	36	23	153	66	219	51.60%
ii	PG Students	20	11	26	24	19	16	25	14	90	65	155	36.50%
iii	Research Scholars	7	9	6	4	11	3	2	8	26	24	50	11.90%
Total		**72**	**30**	**57**	**44**	**77**	**36**	**63**	**45**	**269**	**155**	**424**	
Percentage		70.50%	29.50%	56.40%	43.60%	68.10%	31.90%	58.30%	41.70%	63.40%	36.60%	100%	

The Table 4 shows that the respondents belong to different filed of engineerings such as *Computer Science*, *Civil Engineering*, *Electrical Engineering, Information Technology* and *Mechanical Engineering* who have contributed and participated largely in the study than other branches *Food Technology* and *Nanotechnology*.

II. USE OF INTERNET

This study is based on an investigation of students who are usingThe Internetamong the selected Engineering institutes in district Solan, of Himachal Pradesh. The analyses of the responses received through questionnaire are presented in the subsequent tables.

Table 4. Subject Branch-wise Break-up of Respondents

Courses	Respondents				Total	
	Male	%	Female	%	No.	%
Applied Sciences	17	6.31	6	3.87	23	5.4
Bioinformatics	20	7.43	6	3.87	26	6.1
Biotechnology	4	1.48	9	5.8	13	3
Civil Engineering	41	15.24	18	11.61	59	13.9
Computer Application	4	1.48	2	1.29	6	1.4
Computer Science	46	17.1	26	16.77	72	16.9
Electrical Engineering	40	14.86	18	11.61	58	13.6
Electronic and Communication	25	9.29	12	7.74	37	8.7
Food Technology	2	0.74	12	7.74	14	3.3
Information Technology	25	9.29	27	17.41	52	12.2
Mechanical Engineering	35	13.01	14	9.03	49	11.5
Nanotechnology	10	3.71	5	3.22	15	3.5
Total	**269**		**155**		**424**	

5.1. Experience of Internet Use

To know how longer the students using The Internet, five options (as given in Table 5) were given to the respondents. The analysis in Table 5 reveals that 30.66% respondents are using The Internet from *2 to 4 years* while 28.53% from *more than four y*ears whereas 23.11% respondents using from *1 to 2 years*. The Table also reveals that 7.3% new users of the internet who are using the internet from *less than six months.*

Table 5. Experience of Internet Use

Experience	Respondents				Total	
	Male	%	Female	%	No.	%
Less than 6 months	16	5.94	15	9.67	31	7.31
6 months to 1 year	22	8.17	22	14.19	44	10.37
1 to 2 years	56	20.80	42	27.09	98	23.11
2 to 4 years	83	30.85	47	30.32	130	30.66
More than 4 years	92	34.20	29	18.70	121	28.53
Total	**269**	**100**	**155**	**100**	**424**	**100**

5.2. Frequency of Internet Use

In response to the frequency of Internet use the Table 6 reveals that majority of *Male* (68.77%) and *Female* (85.8%) use *Daily*. While overall responses show that 75% of respondents use the Internet *Daily*. This indicates that The Internetis becoming the 'life line' of the college students. It also shows that The Internet is becoming a useful and important tool to access information in an academic institution. Such amount of internet use forced the college

Table 6. Frequency of Internet use

Frequency	Respondents				Total	
	Male	%	Female	%	No.	%
Daily	185	68.77	133	85.8	318	75
2 -3 Times in a Week	43	15.98	10	6.45	53	12.5
Every Week	28	10.4	8	5.16	36	8.4
Twice a Month	7	2.6	4	2.5	11	2.5
Once in a Month	4	1.48	0	0	4	0.9
Occasionally	2	0.74	0	0	2	0.4
Total	**269**	**100**	**155**	**100**	**424**	**100**

administration to support and fulfil appetite of the students for internet use. The Table also reveals that only 12.5% respondents' use internet *2 to 3 times in a week*. Whereas, there is very less response of the respondents who use the Internet *once in a month* and *occasionally* as the responses could not reach in double digits. In an educational institution, it is rare to find a student who occasionally use the internet since students depend on the internet up to a large scale.

5.3. Amount of Time Spent on the Internet Use

To find out how much time these users spend on Internet use per day, a question, containing four options (as given in Table 7) was asked. Table 7describes that 43.1% of the respondents use the Internet for *2-4 hours per day*, 23.8% for *5-7 hours per day*, 17.2% *more than7 hours*, however, only 15.8% use the Internet for *less than 2 hours* per day. This is a significant number of respondents who use the Internet from 5 to more than 7 hours that indicates a kind of addiction. It is a serious concern about which the administration should take adequate steps because it may harmful for the students.

Table 7. Amount of Time spent on the Internet Use.

Amount of Time Spent	Respondents				Total	
	Male	%	Female	%	No.	%
< 2 Hours/ Day	32	11.8	35	22.5	67	15.8
2- 4 Hours/Day	121	44.9	62	40	183	43.1
5 -7 Hours/Day	67	24.9	34	21.9	101	23.8
>7Hours/Day	49	18.2	24	15.4	73	17.2
Total	**269**	**100**	**155**	**100**	**424**	**100**

5.4. Location of Internet Use

The analysis in Table 8 reveals the location preferred by the students for access Internet. The majority of the respondents i.e. 70.7% preferred to access the internet at their colleges, whereas 20.7% respondents access the internet at their homes although only 8.4% respondents preferred other places such as *cyber café*. Since colleges provide them adequate facilities and IP-based resources for their educational need, therefore, it is essential for the student to access the internetin the colleges itself. It is clear by the responses that colleges has utmost pressure for internet use. Hence, they need to support and ensure internet facilities. As it proved that the internethad become an essential part of academic set up, that has multiple uses.

Table 8. Most Frequently used Location of Internet Use

Location	Respondents				Total	
	Male	%	Female	%	No.	%
College	190	44	135	40	325	42.3
Home	157	36.4	148	43.9	305	39.7
Any Other	84	19.4	54	16	138	17.9
Total	**431**		**337**		**768**	

In the continuation, a multiple choice option (as in Table 9) to know the most preferred place in the college was also given. The analysis in Table 9 reveals that 66% respondents preferred *Computer Center* to access Internet while, 57% preferred *Library*. This shows that the *Library* also has a significant place popular among users along with computer center to support Internet access and academic activities. However, the *Departmental Computer Lab* is also used by 17.6% respondents. The responses show that these places in the colleges are the hub to access The Internet and these especially libraries must be equipped with the

Table 9. Preferred Place for Using the Internet in the Institutes

Place of Access The Internet	Respondents				Total	
	Male	%	Female	%	No.	%
Computer Center	236	40.1	133	39.8	369	40
Departmental Lab	95	16.1	68	20.3	163	17.6
Library	210	35.7	108	32.3	318	34.4
Any other	47	7.9	25	7.4	72	7.8
Total	**588**		**334**		**922**	

latest technological instruments for learning and research.

5.5. Tools for Browsing Internet

The analysis in Table 10 illustrates that maximum of respondents (i.e. 44.5%) used *Desktop* while *Laptop* used by 12.7% respondents to access The Internet. Use of *Mobile* used by 35.9% *Female* and 32.9% *Mal*e respondents that indicate the incremental change in the trend of using latest gadgets for Internet use. However, for accessing The Internet from the *Tablet* are also noticed that is used by 9.9% and 13% among *Male* and *Female* respectively. It is expected that the use these small gadgets will increase in the near future.

Table 10. Tools for Browsing Internet

Tools for Internet use	Respondents				Total	
	Male	%	Female	%	No.	%
Desktop	210	44.5	123	46	333	45.1
Laptop	59	12.5	35	13.1	94	12.7
Mobile	155	32.9	96	35.9	251	34
Tablet	47	9.9	13	4.8	60	8.1
Total	**471**		**267**		**738**	

5.6. Web Browser for Use to Access Internet

Table 11 discloses that 79% respondents use *Mozilla Firefox*, 57% *Google Chrome*, 15.3% *Internet Explorer* whereas 14.1% respondents use *Opera* browsers to access The Internet. However, the responses received under any other options show that *Netscape* and *UC Browser* are also used up to some extent. The responses indicate that the *Mozilla Firefox* browser is the most preferred by the engineering students. The Mozilla browser is freely available in open source environment that getting popularity among students.

Table 11. Frequently Used web Browsers

Web Browser Used	Respondents				Total	
	Male	%	Female	%	No.	%
Google Chrome	172	63.9	70	45.1	242	57
Internet Explorer	25	9.2	40	25.8	65	15.3
Mozilla Firefox	229	85.1	106	68.3	335	79
Opera	35	13	25	16.1	60	14.1
Any other	22	8.1	3	1.9	25	5.8
Total	**461**		**241**		**702**	

5.7. Purposes for Internet Use

To know the purpose of using The Internet, a multiple choice question was asked in which nine possible purposes were given. Table 12 depicts that all the respondents' use Internet primarily for their *Education* as it received 100% response. While 77.1% respondents use Internet significantly for *Chatting* while 67.4% for checking *Email*, 63.2% for *Finding Information*, 44.8% for *Reading News*, 42.9% for *Downloading Multimedia* files such as music, lecture videos, etc. A trend for *Online Shopping* and *Playing games* on The Internetis noticed from the Table 12. The college and Library administration together need a check and balance to restrict the objectionable download in the campus.

Table 12. Purposes for Internet Use

Purpose for Internet use	Respondents				Total	
	Male	%	Female	%	No.	%
Chatting	215	79.9	112	72.2	327	77.1
Download Multimedia	101	37.5	81	52.2	182	42.9
Education	269	100	155	100	424	100
E-Mail	240	89.2	46	29.6	286	67.4
Finding Information	144	53.5	124	80	268	63.2
Online Shopping	54	20	14	9	68	16
Play Games	32	11.8	22	14.1	54	12.7
Reading News	145	53.9	45	29	190	44.8
Research for Dissertation	96	35.6	14	9	110	25.9
Total	**1296**		**613**		**1909**	

5.8. Use of Internet Resources

The main purpose of installation of computer facilities in the libraries is to access electronic resources available in different formats. In the present study, an attempt has made to find out the usage of electronic resources by the respondents. Table 13 indicates that 29.2% of the respondents use the Internet for consulting *Databases*, 25.3% for access and download *e-Journals*, 13.7% for viewing *Theses and Dissertations*, 5.3% for *e-Books,* 12.1% for conference proceedings, 13.9% for theses and dissertations. The number of respondents who use the Internet for consulting *Technical Reports* and *Standards*

Table 13. Use of Internet resources

Use of Internet Resources	Respondents				Total	
	Male	%	Female	%	No.	%
Conference Proceedings	74	12.3	59	11.8	133	12.1
Databases	183	30.6	138	27.6	321	29.2
E-books	24	4	35	7	59	5.3
E-journals	154	25.7	124	24.8	278	25.3
Standards and Patents	14	2.3	32	6.4	46	4.1
Technical Reports	67	11.2	42	8.4	109	9.9
Theses and Dissertations	82	13.7	69	13.8	151	13.7
Total	**598**		**499**		**1097**	

and *Patents* are significantly less i.e. 9.9% and 4.1% respectively. The analysis suggests that Libraries need to build up their reference collection.

5.9. Awareness of Search Techniques

Since the user finds it difficult to search their relevant information, therefore, an attempt to find out whether they are aware of different search techniques has made. Table 14 highlights that majority (i.e. 90%) of the users search their information on the internet by *Keywords* that knew as *Basic search*. However, the *Phrase Search* technique is also used by 44.3% respondents whoare further an extension of the basic search. 35.1% users use the Advance Search option, rest searches i.e. *Truncated and Boolean* searches are least used by the user and ranges those received 5.1% to 20% response respectively. There is a need of orientation among the students about searching and information retrieval techniques on the internet.

Table 14. Awareness on Search Techniques

Search Technique	Respondents				Total	
	Male	%	Female	%	No.	%
Basic (Keywords)	247	91.8	135	87	382	90
Boolean	57	21.1	28	18	85	20
Truncated	17	6.3	5	3.2	22	5.1
Phrase	145	53.9	43	27.7	188	44.3
Advanced	83	30.8	66	42.5	149	35.1
Any other	19	7	4	2.5	23	5.4
Total	**568**		**281**		**849**	

5.10. Use of Internet Services

Keeping in mind the objectives of this study, a question about the use of internet services used by the students was asked to the respondents. There were eight most preferred services were identified and given in the questionnaire. The responses received are given in Table 15.

Table 15 shows that *e-mail* is the most popular service among the respondents. All of the respondents use the Internet for checking and sending e-mails followed by *Chatting* (76.8%), the World Wide Web used by 72.6% respondents whereas *File Transfer Protocol* used by 70.2%

Table 15. Use of Internet Services

Internet Services	Respondents				Total	
	Male	%	Female	%	No.	%
Chatting	216	50.9	110	7.1	326	76.8
Download Multimedia	102	24	48	42.9	150	35.3
Electronic Mail (E-mail)	269	63.4	155	100	424	100
File Transfer Protocol (FTP)	240	56.6	58	9	298	70.2
Frequently Asked Questions (FAQs)	145	34.1	80	67.4	225	53
Information Bulletin Board	56	13.2	39	63.2	95	22.4
Discussion on Social Networking	35	8.2	16	16	51	12
World Wide Web	155	36.5	153	12.7	308	72.6
Total	**1218**		**659**	44.8	**1877**	

and 53% respondents used for *Frequently Asked Questions*. The use of the other services such as *Download Multimedia*, *Information Bulletin Board,* and *Discussion on Social Networking* ranges from12% to 35.3%. The table reveals that email and chatting are the integrated elements of internet services for users for which the students access Internet.

5.11. Site Preferred for E-mail

As discussed above, that the email is one the most used services on Internet, therefore, it is essential to know the most favorite email site that used by the respondents. Table 15 discloses that *Gmail* is the most preferred site for the email account on the internet that is used by 84.6% respondents. However, the *Yahoo* email service that received 57.7% responses also popular among respondents. Whereas, other email sites are relatively least preferred by the users that range from13.2% to 31.7%. *Gmail* is the most

Table 16. Site Preferred for e-mail

Preferred Email	Respondents				Total	
	Male	%	Female	%	No.	%
Gmail	239	88.8	120	77.4	359	84.6
Hotmail	40	14.8	16	10.3	56	13.2
Rediff mail	76	28.2	58	36.9	134	31.6
Yahoo Mail	150	55.7	95	60.9	245	57.7
Any other	60	22.3	21	12.9	81	19.1
Total	**565**		**310**		**875**	

user-friendly and interactive services that and provides additional facilities to its users. The response received under any other option reveals that *the respondents also use Indiatime*s.

5.12. Problems faced by the Users

One of the main purposes of s of this study is to find out the major problems faced by the students during internet use. By the preliminary literature search, major problems associated with the internet were identified, those are listedinTable 17.

Table 17 highlights that using the Internet is not free from problems. The majority (71.6%) of the respondents believe that *Slow Speed* of the Internet is the major problem for respondents while using the Internet. Slow Internet access speed takes a lot of their slotted time to retrieve the relevant information. Another important problem faced by

Table 17. Problems Faced by the Users

Problems	Respondents				Total	
	Male	%	Female	%	No.	%
Slow Speed of Internet	176	65.4	128	82.5	304	71.6
Data Security	179	66.5	106	68.3	285	67.2
Authenticity of Information	118	43.8	75	48.3	193	45.5
Privacy Problem	49	18.2	109	70.3	158	37.2
Difficulty in finding information	46	17.1	86	55.4	132	31.1
Overflow of Information	56	20.8	55	35.4	111	26.1
Missing of desired webpage	36	13.3	43	27.7	79	18.6
Total	**660**		**602**		**1262**	

the (67.2%) users is related to *Data Security*. Whereas, 45.5% users believe that *Authenticity of Information* is not sure over The Internet. The table also shows that *Overwhelming of Information* over Internet caused *Difficulty in finding* relevant information. However, the majority of female respondents feels that *Privacy* is a significant problem while using The Internet. The above-mentioned problem are natural phenomena associated with The Internet, although up to some extent these problems may be reduced, depend upon the administration.

5.13. Benefit of Internet over Conventional Documents

Although, there are problems with internet use, yet there are lots of benefits. To know the benefits of the internet, several possible benefits were identified and included in the questionnaire as multiple choice option. These are given below in Table 18.

Table 18 exhibits that more than 80% of the respondents feel that in comparison to conventional documents, the Internet is *Easy to Use* (87.2%), more informative (99.7%), *Time Saving* (100%) and *More Useful*(91.9%) and 58.4% of the respondents admit that it is less expensive in comparison to conventional documents.However, 62% of respondents preferred Internet resources than traditional documents for their study. 50% respondent believe that the Internet covered the latest information on their relevant subject. The Table also reveals other important benefits of the internet such as Anywhere, Anytime and quick access to information, etc.

5.14. Influence of the Internet on Academic Efficiency

The internet has influenced every aspect of human life from birth to death where birth and death certificates are issued and verified online.

The table 19 reveals the influence of Internet use and find that *Anywhere, Anytime Access to Information* and *Easy Sharing of Information* are the major influences that responses by 17.9% respondents. However, 16% respondents think that due to the availability of latest and instant access to information on the Internet, *Dependency on The Internet has increased*. Whereas 15.1 % respondents' response that the influence of Internet resulted regarding *Fatigue and Sleeping Problems*. The table also reveals some positive that included *E-Access to Library Resources* and *More Research Output* in a prompt manner. Many of the respondents' responses that the Internet has improved their *Professional Competence*, and also admit that The Internet has expedited their research process promptly. However, the advent of Internet resulted in increased facilities such as readymade syllabus for the

Table 18. Benefit of Internet over Conventional Documents

Benefit	Respondents				Total	
	Male	%	Female	%	No.	%
Covered latest information	175	65	37	68	212	50
Easy to use	244	90.7	126	46.8	370	87.2
Less expensive	92	34.2	156	47	248	58.4
More Informative	235	87.2	188	69.8	423	99.7
More preferred	175	65	88	32.7	263	62
More useful	216	80.2	174	64.6	390	91.9
Time saving	219	81.4	205	76.2	424	100
Any other	37	13.7	104	38.6	141	33.2
Total	**1393**		**1078**		**2471**	

students which is available to consult frequently that resulted in decreased in the habit of searching hard copies of library resources. Nowadays, students preferred to seat before their Computers and Laptops rather go outside for physical activities and reading books in the Library. They kept a library within their pen drive and access whenever they want. Earlier, using the internet was assumed to wastage of time, but the result of this study reveal that only 7.4% responses believed that using the internet is Time Consuming. The study reveals that searching is convenient on the Internet.

Table 19. Influence of Internet on Academic Efficiency

Influence of Using The Internet	Respondents				Total	
	Male	%	Female	%	No.	%
Anywhere, Anytime Access to Information	201	17.5	137	18.6	338	17.9
Easy Sharing of Information	210	18.3	128	17.3	338	17.9
Dependency on Internet Increased	185	16.1	117	15.8	302	16
Fatigue and Sleeping Problems	179	15.6	106	14.4	285	15.1
E-Access to Library Resources	148	12.9	95	12.9	243	12.9
More research output	100	8.7	51	6.9	151	8
Time Consuming	78	6.8	62	8.4	140	7.4
Convenient Searching	46	4	40	5.4	86	4.5
Total	**1147**		**736**		**1883**	

5.15. User Satisfaction with Internet Facilities

Since the government as well as the educational institutes, invest a huge amount in building infrastructure in providing internet services, hence, it seems appropriate to know about the satisfaction among the students about available infrastructure and services under the engineering colleges. This study provides an overview of the satisfaction level of the students.

Table 20 confirms that the majority i.e. 89.3% of respondents are *Least Satisfied* with the Internet facilities being provided by these institutions in the district as this received rank 1st among the other options. However, there is a large number of students who are *Not Satisfied* with the facilities of Internet among the Engineering Institutes, it received rank 3rd on the other hand, 35.3% respondents are *Strongly Satisfied*with a 4th rankfor the Internet facilities among the engineering institutes under study, however, 83% respondents are *Satisfied* that ranks 2nd for the facilities of the Internet among institutions. It is a mixed response. However, the majority biased towards less satisfaction, hence, the administration of these colleges need to adopt adequate measures to satisfy the users.

6. FINDINGS OF THE STUDY

Nature, age and the qualification of the sample population of the study were mixed. Since they were random sampling for the data collection, hence we received mixed responses too. More than 50% of the respondents were undergraduate. Similarly, there was gender wise unequal distribution that participated in the study. It was also found that many sub-branches of subjects and courses are being offered by these engineering institutes in the district. The micro-classification of the subjects ensures different opportunities for the students. The findings of the questionnaire based responses about the use of the internet is given below:

Table 20. User Satisfaction with Internet facilities

User Satisfaction	Respondents				Total		Rank
	Male	%	Female	%	No.	%	
Least satisfied	260	96.6	119	76.7	379	89.3	1
Not satisfied	121	44.9	85	54.8	206	48.5	3
Satisfied	217	80.6	135	87	352	83	2
Strongly satisfied	100	37.1	50	32.5	150	35.3	4
No comments	32	11.8	29	18.7	61	14.3	5
Total	**730**		**418**		**1148**		

- It is found that maximum students are using the internet from 2 to 4 years' experience and spent 2 to 4 hours daily for internet access. There was a significant percentage of respondents who have more than four years' experience of using the internet. However, it is not clear either they heave internal or external experience. The students' usually spent their 2 to 4 hours daily on the internet. The phenomenon fixed for the students enrolled for 1 to 4 years for 6 to 8 semesters in their complete duration of course.
- The students prefer to access the internet at their respective colleges rather their homes. The computer center is the most preferred place for using the internet among the students of the respective colleges; however, the libraries are also a significant and popular place among students to access the internet. Thus, these places supplement each other for imparting education.
- The majority of the students use desktop computers as a preferred tool to access the internet. However, a trend for using laptops and other gadgets such as mobiles and tablets are also found from the study. As regards to internet browsers, Mozilla Firefox is the most usable browser that is preferred by the majority of the students. Although, Google Chrome and Internet Explorer have also registered its presence among the students.
- It is found that all the students using internet primarily to supplement their education as a whole. It is also found that the students like email services for chatting, checking and sending emails on the internet. Also, the students use internet for another purpose such as chatting, checking and sending emails. It is found that Gmail is the most used electronic mail service which is popular among students. Whereas, Yahoo is also preferred and used by the users. It is found that the electronic databases and e-journals are the main resources concern by the students using Internet in the libraries. However, theses and dissertation, standards and patents and technical reports, etc. are relatively less preferred resources that used on the internet.
- Keyword or basic search for finding information on the internet is most preferred search technique among the students used to search their information. It is found that the students are not aware of other different kinds of search techniques.
- It is found that majority of the students are agreed upon the statement that Internet resources have greater benefits than traditional documents in the libraries.
- The major positive influence of Internet use is that one can access any information from anywhere at any time. Moreover, The Internet has ensured easy sharing of information. However, it caused fatigue and difficulties in sleeping among the students that need to be takencare, and the students should avoid long hours sitting before a computer screen.
- It is found that maximum students are not satisfied with the internet facilities under the institutes. A need of betterment is seemed to be appropriate that could satisfy the students.
- The slow speed of internet, data security and authenticity of information are the major problems found from the study. Privacy is another issue before the majority of the female students.

7. SUGGESTIONS

Based on the observation and findings of the study, the suggestions to improve the use of the internet among the students are as follows:

- The engineering colleges in the district Solan should enhance the computer infrastructure; theespecially server should be strengthened so that a high speed of the internet could be ensured. The administration should focuson the development of the department computer laboratories; this could prevent lots of time of the students.
- The institutions should enhance the use of mobile and its associated technologies for internet use. The management of these institutions should think about the positive use of the internet services like chatting, online gaming, social networking sites, etc. the interactive session through video conferencing should be established under these intuitions.
- The libraries should be given freedom to make the students aware through orientation and information literacy programs on enhancing the use of resources available. This willfacilitate easy and convenient retrieval and location of relevant information.
- The intuitions should ensure the data security and privacy of the users who access the internet in the campus. The institutes should also make awareness about the harms of long hours sitting before the computer screen. The users should restrict themselves and avoid excessive use of the internet.
- The internet should encourage their respective library

to build their electronic collection. Since it is convenient to access and easy to search and use.

- A significant number of students are not satisfied with the internet facilities among the colleges. Hence, the administration should try to identify the reasons to get 100% users satisfaction with internet facilities.

8. CONCLUSION

The use internet in an academic environment has ensured easy and convenient access to information. The internet has become an essential and integral part nowadays that supplement and supported the library resources. The libraries are setting up new facilities in the form of cyber sections and providing users a pleasant atmosphere of accessing online information sources. The technological changes and developments have been noticed in the field of education particularly in engineering education in the region. The population from the neighboring across India are attracting for getting an education from here. The result of the study present before the educational institutions with both opportunities and challenges. The opportunity exists because the guardians think that educational institution is doing a good job regarding internet facilities. This allows the institutions to use the Internet in creative and progressive ways. The challenges exist in the same ways; the parent expectsthat intuition will provide the internet facilities in a well thought out educational values. The fact is that the dependency of both the students as well as institutions depends on the internet. The result also suggests coordination between the computer centers and libraries of the institutions. A common cooperation among the regional libraries should also consider for sharing of online information.

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