

## Information and Communication Technology Literacy Competencies among Faculty Members of Engineering Colleges in Mysore Region: A Study

**Ganesha S.**

Research Scholar  
Department of Library and Information Science  
University of Mysore  
Manasagangotri, Mysuru-570006  
e-mail:gangotriganesh@gmail.com

**Mallinath Kumbar**

Professor  
Department of Library and Information Science  
University of Mysore  
Manasagangotri, Mysuru -570006  
e-mail: mallinathk@yahoo.com

***Abstract** - The present study examines the access and frequency of use of ICT facilities, the purpose of use computer, rate the level of computer skill, the experience of use of the internet, use of e-resources and services, problems faced while accessing e-resources and opinion on the impact of ICT on academic performance among Faculty Members of Engineering Colleges in Mysore Region. For this purpose, the researchers prepared a well-structured questionnaire as a tool for data collection. The collected questionnaire has been analyzed and presented in the form of suitable tables. The article concludes with appropriate suggestions to improve ICT literacy competencies among the faculty members of engineering colleges.*

**Keywords:** ICT Literacy, Electronic Resources, ICT Literacy Competencies, Retrieval Techniques, Search Strategies.

### 1. Introduction

To teach effectively in the network environment should be the goal of every teaching professional. Traditional skills are no longer adequate for those who want to be engineering faculty in the new electronic and digital era. To provide effective teaching to their students, engineering faculties need to be competent in emerging areas such as using digital technology, communication tools, searching and retrieval techniques. As the discipline of engineering is one of the fastest developing as a result of scientific and technological advancement. The growth of digital information, the focus on lifelong learning, and the demand for highly skilled workers have highlighted the need for ICT-related competencies. Thus, engineering faculty need to be equipped with strong ICT literacy skills to succeed in their academic and future professional endeavors. The present study was conducted to assess the ICT Literacy Competencies among Faculty Members of Engineering Colleges in the Mysore Region.

### 2. Review of literature

Many similar studies related to the topic have been reviewed, and the literature review gives a broader outlook. Some of the important reviews are presented below.

Baikady and Mudhol (2013) carried out a study on Computer Literacy and the use of Web Resources on the medical faculty and students. They found all the respondents possessed the necessary computer literacy skills. The faculty and PG students who were having above-average computer literacy skills used web resources less frequently and had below-average computer skills did not frequently access web resources. Ramamurthy, Siridevi and Ramu (2015) investigated students' information literacy and search skills in five selected Engineering Colleges in Chittoor District, Andhra Pradesh and found that preponderance of respondents have common knowledge of information literacy skills, showed high deficiency in identifying diverse information sources. The various information literacy programmes to the respondents in institutions lacked hands-on training. Thus, the need for an enhanced and continuous library user education geared towards empowering students to be sufficiently familiar with information sources.

Deepmala and Shivraj's (2016) study is based on information literacy skills among 96 women faculty in 27 engineering colleges of Coimbatore and finds a rise in the use of social media for Knowledge share. Kumar and Kumbar (2015) conducted a study on autonomous engineering institutions affiliated to Visvesvaraya Technological University in Karnataka to examine the factors that affect the optimum utilization of electronic information resources and search pattern and found use of different types of electronic information resources by the faculty, source of awareness, learn to use, problems faced, the purpose of use, preferred search engines and search methods for effective retrieval of electronic information resources. The members of the faculty are well aware of existing resources and library services. But they need training in the area of information search and retrieval in the web environment.

Thirmagal and Mani (2016) examined the information literacy skills among faculty members of engineering colleges in Tirunelveli district, Tamil Nadu. The majority of faculty members need academic information and they needed information on the internet /web. The faculty members use keyword and Boolean operators to search for the required information in the search strategy. They are aware of plagiarism. The faculty members need an information literacy training programme to become lifelong learners.

### **3. Objectives of the Study**

The objectives behind conducting the present study are:

1. To know the ICT literacy competencies among the members of the faculty of engineering colleges.
2. To know the frequency of use of computer/ laptop by the members of the faculty.
3. To find out the purpose of the use of computers and to rate the level of computer skills.
4. To know the extent of using electronic information resources and services by faculty members of engineering colleges.
5. To investigate the problems faced while accessing e-resources and know the impact of ICT on academic performance.

### **4. Methodology**

The study's scope is restricted to Information and Communication Technology literacy competencies among faculty members of engineering colleges in the Mysore region. At present Mysore region has a total of 60 engineering colleges affiliated to VTU. A total of 44

engineering colleges are covered in this study, which are established before the year 2010. The colleges were also selected based on their good ICT infrastructure and also which provide a large amount of ICT enabled information resources and services.

The survey method was adopted using questionnaire as a tool for data collection. A structured questionnaire was designed and distributed among faculty members of engineering colleges in the Mysore region. Out of 1475 questionnaires distributed among faculty members, 1224 filled-in questionnaires were received back, amounting to 82.98%. In addition to the questionnaire method, interview schedule and observation method were also used to collect required information as a supplement to the questionnaire method to bring more clarity to the essential data and use for analysis and interpretation of data.

## 5. Data analysis

The data collected by different methods were analyzed and interpreted and the same is presented in the following tables.

### 5.1. Designation-wise distribution

The Table-1 shows the designation wise distribution of faculty members in Engineering Colleges examined in Mysore.

**Table-1: Designation-wise distribution**

Designation	Number(N=1224)	Percentage
Professor	73	05.96
Associate Professor	159	12.99
Assistant Professor	992	81.04

The Table-1 depicts that a very high number of faculty members 992 (81.04%) are 'Assistant Professors', followed by 159 (12.99%) 'Associate Professors' and 73(05.96%) are 'Professors'.

### 5.2. Frequency of use of computer/ laptop

The frequency of use of computer/ laptop by the faculty members are summarized in Table-2. It is clear from the study that 1224 (100.00%) of faculty members access and use ICT facilities. The Table-2 depicts that 522 (45.09%) of faculty members access Computer/ Laptop 'Daily', followed by 219 (17.89%) access 'Twice in a week', 193 (15.76%) access 'Occasionally', 129 (10.53%) access 'Fortnightly', 108 (08.382%) access 'Weekly' and 53 (04.33%) of faculty members access to computer/ Laptop 'Monthly'.

**Table-2: Frequency of use of computer/ laptop**

Frequency of Use of Computer	Civil Engg. (N=279)	Mech. Engg. (N=242)	Elect. Engg. (N=157)	Comp. Sci. Engg. (N=349)	Biotech. and Chem.Engg. (N=87)	Basic Sciences (N=110)	Total (N=1224)
Daily	74 (26.52)	62 (25.61)	49 (31.21)	286 (81.94)	33 (37.93)	18 (16.36)	522 (45.09)
Twice in a week	32 (11.46)	66 (27.27)	34 (21.65)	31 (08.88)	17 (19.54)	39 (35.45)	219 (17.89)
Weekly	27	25	23	20	06	07	108

	(09.67)	(10.33)	(14.64)	(05.73)	(06.89)	(06.36)	(08.82)
<b>Fortnightly</b>	51 (18.27)	36 (14.87)	12 (07.64)	02 (00.57)	10 (11.49)	18 (16.36)	129 (10.53)
<b>Monthly</b>	23 (08.24)	12 (04.95)	08 (05.09)	01 (00.28)	03 (03.44)	06 (05.45)	53 (04.33)
<b>Occasionally</b>	72 (25.80)	41 (16.94)	31 (19.74)	09 (02.57)	18 (20.68)	22 (20.00)	193 (15.76)
Note: Figures in parentheses indicate percentage							

Table-2 also depicts that 74 (26.52%) of faculty members of Civil Engineering access to computer/ Laptop ‘Daily’, followed by 66 (27.27%) of faculty members of Mechanical Engineering access to computer/ Laptop ‘Twice in a Week’, 49 (31.21%) of faculty members of Electrical Engineering access to Computer/Laptops ‘Daily’, 286 (81.94%) of faculty members of Computer Engineering access to Computer/Laptops ‘Daily’, 33 (37.93%) of faculty members of Biotechnology and Chemical engineering access to Computer/ Laptop ‘Daily’ and 39 (35.45%) of faculty members of Basic Sciences access to Computer/ Laptop ‘Twice in a Week’.

### 5.3. Purpose of use computer/laptop

The purposes for which the Engineering faculties mainly make use of Computer/ Laptop is summarized in Table-3. The Table-3 depicts that 1169 (95.50%) of faculty members use computer/laptop for teaching, followed by 826 (67.48%) use for research purpose, 772 (63.07%) use for recreational purpose and 416 (33.98%) of faculty members use computer/laptop for personal work.

**Table-3: Purpose of use computer/laptop**

<b>Purpose of use Computer</b>	<b>Civil Engg. (N=279)</b>	<b>Mech. Engg. (N=242)</b>	<b>Elect. Engg. (N=157)</b>	<b>Comp. Sci. Engg. (N=349)</b>	<b>Biotech. and Chem.Eng. (N=87)</b>	<b>Basic Sciences (N=110)</b>	<b>Total (N=1224)</b>
Research purpose	176 (63.08)	182 (75.20)	128 (81.52)	241 (69.05)	51 (58.62)	48 (43.63)	826 (67.48)
Teaching Purpose	261 (93.54)	224 (92.56)	151 (96.17)	349 (100.00)	82 (94.25)	102 (92.72)	1169 (95.50)
Recreational Purpose	149 (53.40)	136 (56.19)	102 (64.96)	288 (82.52)	54 (62.06)	43 (39.09)	772 (63.07)
Personal Work	76 (27.24)	88 (36.36)	46 (29.29)	129 (36.96)	36 (41.37)	41 (37.27)	416 (33.98)
<b><math>\chi^2= 38.351, df= 15, p =0.00080053</math></b>							
Note: Figures in parentheses indicate percentage and because of multiple choice options the percentage is exceeded to more than 100%.							

The Table-3 also depicts that 261 (93.54%) of faculty members of Civil Engineering, 224 (92.56%) of faculty members of Mechanical Engineering, 151 (96.17%) of faculty members of Electrical Engineering, 349 (100.00%) of faculty members of Computer Science Engineering, 82 (94.25%) of faculty members of Biotechnology and Chemical engineering and 102 (92.72%) of faculty members of Basic Sciences use computer/ laptop for teaching.

#### 5.4. Rate the level of computer skill

The rating towards the level of computer skill has been summarized in Table-4. The Table-4 depicts that 515 (42.07%) of faculty members rate level of Computer skill as 'Excellent' with mean value 3.485437 and SD 1.171374, followed by 315 (25.73%) rate as 'Good' with mean value 2.539683 and SD 1.535045, 311 (25.40%) rate as 'Fair' with mean value 2.877814 and SD 1.806879 and 83 (06.78%) of faculty members rate level of Computer skill as 'Not so good' with mean value 2.554217 and SD 1.757963.

**Table-4: Rate the level of computer skill**

Level of Computer Skill	Civil Engg. (N=279)	Mech. Engg. (N=242)	Elect. Engg. (N=157)	Comp. Sci. Engg. (N=349)	Biotech. And Chem. Engg. (N=87)	Basic Sciences (N=110)	Total (N=1224)	Mean	SD
Excellent	52 (18.63)	48 (19.83)	76 (48.40)	298 (85.38)	22 (25.28)	19 (17.27)	515 (42.07)	3.49	1.17
Good	109 (39.06)	76 (31.40)	41 (26.11)	43 (12.32)	14 (16.09)	32 (29.09)	315 (25.73)	2.54	1.54
Fair	88 (31.54)	94 (38.84)	29 (18.47)	07 (02.00)	39 (44.82)	54 (49.09)	311 (25.40)	2.88	1.81
Not So Good	30 (10.75)	24 (09.91)	11 (07.00)	01 (00.28)	12 (13.79)	05 (04.54)	83 (06.78)	2.55	1.76

Note: Figures in parentheses indicate percentage

The Table-4 also depicts that 109 (39.06%) of faculty members of Civil Engineering rate level of computer skill as 'Good', followed by 94 (38.84%) of Mechanical Engineering rate level of computer skill as 'Fair', 76 (48.40%) of Electrical Engineering rate level of computer skill as 'Excellent', 298 (85.38%) of Computer Science Engineering rate level of computer skill as 'Excellent' and 39 (44.82%) of faculty members from Biotechnology and Chemical engineering and 54 (49.09%) of Basic Sciences rate level of computer skill as 'Fair'.

#### 5.5. Experience of use of internet

The experience of the use of the internet by the faculty members has been summarized in Table-5. The Table-5 depicts that 626 (51.14%) of faculty members have experience of '11 to 15 Years' towards the use of the internet with a mean value of 3.014377 and SD 1.483062, followed by 338 (27.61%) of faculty members who have experience of '6 to 10 Years' with mean value 3.201183 and SD 1.692587, 192 (15.68%) of faculty members have experience of '15 to 20 Years' with mean value 2.916667 and SD 1.466051, 42 (03.43%) of faculty members have experience of 'Above 20 Years' with mean value 2.904762 and SD 1.323947. About 26 (02.12%) of faculty members have experience of '1-5 Years' towards using the internet with mean value 1.961538 and SD 1.453928.

**Table-5: Experience of use of internet**

Experience of Use of Internet	Civil Engg. (N=279)	Mech. Engg. (N=242)	Elect. Engg. (N=157)	Comp. Sci. Engg. (N=349)	Biotech. And Chem. Engg. (N=87)	Basic Sciences (N=110)	Total (N=1224)	Mean	SD
1-5 years	13 (04.65)	09 (03.71)	01 (00.63)	00 (00.00)	02 (02.29)	01 (00.90)	26 (02.12)	1.96	1.45
6-10 Years	68 (24.37)	74 (30.57)	56 (35.66)	43 (12.32)	41 (47.12)	56 (50.90)	338 (27.61)	3.20	1.69
11 to 15	151	93	84	224	32	42	626	3.01	1.48

Years	(54.12)	(38.42)	(53.50)	(64.18)	(36.78)	(38.18)	(51.14)		
15 to 20 Years	39 (13.97)	56 (23.14)	10 (06.36)	67 (19.19)	11 (12.64)	09 (08.18)	192 (15.68)	2.92	1.47
Above 20 Years	08 (02.86)	10 (04.13)	06 (03.82)	15 (04.29)	01 (01.14)	02 (01.81)	42 (03.43)	2.90	1.32
<b><math>\chi^2= 148.313, df=20, P =0.00</math></b>									
Note: Figures in parentheses indicate percentage									

The Table-5 also depicts that 151 (54.12%) of faculty members of Civil Engineering, 93 (38.42%) of faculty members of Mechanical Engineering, 84 (53.50%) of faculty members of Electrical Engineering, 224 (64.18%) of faculty members of Computer Science Engineering have experience of ‘11 to 15 Years’ towards the use of the internet. About 41 (47.12%) of faculty members of Biotechnology and Chemical engineering and 56 (50.90%) of Basic Sciences faculty have experience of ‘6 to 10 Years’ towards the use of the internet.

### 5.6. Use of electronic information resources

The use of electronic information resources by the members of the faculty has been summarized in Table-6. The Table-6 depicts that 1157 (94.52%) of faculty opine members as ‘Yes’ towards use electronic information resources and 67 (05.47%) of faculty members opine as ‘No’ towards use electronic information resources.

**Table-6: Use of electronic information resources**

Use of Electronic Information Resources	Civil Engg. (N=279)	Mech. Engg. (N=242)	Elect. Engg. (N=157)	Comp. Sci. Engg. (N=349)	Biotech. and Chem.Engg (N=87)	Basic Sciences (N=110)	Total (N=1224)
Yes	256 (91.17)	216 (89.25)	149 (94.90)	346 (99.14)	85 (97.70)	105 (95.45)	1157 (94.52)
No	23 (12.13)	26 (10.74)	08 (05.09)	03 (00.85)	02 (02.29)	05 (04.54)	67 (05.47)
<b><math>\chi^2= 33.409, df=5, P=0.00000312</math></b>							
Note: Figures in parentheses indicate percentage							

The Table-6 also depicts that 256 (91.17%) of faculty members from Civil Engineering, 216 (89.25%) of faculty members from Mechanical Engineering, 149 (94.90%) of faculty members from Electrical Engineering, 346 (99.14%) of faculty members from Computer Science Engineering, 85 (97.70%) of faculty members from Biotechnology and Chemical engineering and 105 (95.45%) of faculty members from Basic Sciences opine as ‘Yes’ towards the use electronic information resources. About 23 (12.13%) of faculty members from Civil Engineering, 26 (10.74%) of faculty members from Mechanical Engineering, 08(05.09%) of faculty members from Electrical Engineering, 03(00.85%) of faculty members from Computer Science Engineering, 02 (02.29%) of faculty members from Biotechnology and Chemical Engineering and 05 (04.54%) of faculty members from Basic Sciences opine as ‘No’ towards the use electronic information resources.

### 5.7. Extent of use of electronic information resources

The extent of the use of electronic information resources by faculty members has been summarized in Table-7. The Table-7 depicts that 419 (34.23%) of faculty members use Full text Databases ‘To a little extent’, followed by 364 (29.73%) of faculty members ‘Not at all’ use Indexing and Abstracting Databases, 401 (32.76%) of faculty members use e-journals



‘To a great extent’, 328 (26.79%) of faculty members use e-books ‘ To a moderate extent’, 461 (37.66%) of faculty members use e-thesis and dissertation ‘To a little extent’, 464 (37.90%) of faculty members use e-reference resources ‘To a great extent’, 659 (53.83%) of faculty members use e-newspapers ‘To a great extent’, 506 (41.33%) of faculty members use Statistical Databases‘To a little extent’, 403 (32.92%) of faculty members use Multimedia products‘To a great extent’ and 421 (34.39%) of faculty members use E-Clipping Services ‘To al little extent’.

**5.8. Table-7: Extent of use of electronic information resources**

Electronic Resources	To a great Extent	To a moderate Extent	To a little Extent	Cannot say	Not at all
Full text Databases	261 (21.32)	196 (16.01)	419 (34.23)	232 (18.95)	116 (09.47)
Indexing and Abstracting Databases	194 (15.84)	263 (21.48)	207 (16.91)	196 (16.01)	364 (29.73)
E- journals	401 (32.76)	322 (26.30)	280 (22.87)	184 (15.03)	37 (03.02)
E- Book	209 (17.07)	328 (26.79)	308 (25.16)	236 (19.28)	143 (11.68)
E-Thesis and Dissertation	301 (24.59)	407 (33.25)	461 (37.66)	35 (02.85)	20 (01.63)
E-Reference Database	464 (37.90)	425 (34.72)	302 (24.67)	26 (02.12)	07 (00.57)
E-Newspapers	659 (53.83)	293 (23.93)	210 (17.15)	44 (03.59)	18 (01.47)
Statistical Databases	300 (24.50)	241 (19.68)	506 (41.33)	126 (10.29)	51 (04.16)
Multimedia Products	403 (32.92)	327 (26.71)	273 (22.30)	185 (15.11)	36 (02.94)
E-Clipping	293 (23.93)	367 (29.98)	421 (34.39)	74 (06.04)	69 (05.63)
<b><math>\chi^2= 2603.642, df=36, P=0.00</math></b>					
Figures in parentheses indicate percentage					

**5.8. Extent of use of electronic information services**

The extent of the use of electronic information services by faculty members has been summarized in Table-8. The Table-8 depicts that 403 (32.92%) of faculty members access to OPAC ‘To a moderate extent’, followed by 394 (32.18%) of faculty membersAccess to Internet in the Library‘ To a little extent’, 461 (37.66%) of faculty members use Current Awareness Service (CAS)‘To a great extent’, 586 (47.87%) of faculty members use Selective Dissemination of information (SDI)‘To a great extent’, 462 (37.74%) of faculty members use Electronic References Services‘To a little extent’, 569 (46.48%) of faculty members ‘Not at all’ Literature Search Serviceand 406 (33.16%) of faculty members use E-Document Delivery Services‘To a little extent’.

**Table-8: Extent of use of electronic information services**

Services	To a great extent	To a moderate extent	To a little extent	Cannot say	Not at all
Access to OPAC	389 (31.78)	403 (32.92)	295 (24.10)	14 (01.14)	23 (01.87)
Access to Internet in the Library	146 (11.92)	239 (19.52)	394 (32.18)	84 (06.86)	361 (29.49)
Current Awareness Service (CAS)	461 (37.66)	388 (31.69)	299 (24.42)	52 (04.24)	24 (01.96)
Selective Dissemination of information (SDI)	586 (47.87)	461 (37.66)	145 (11.84)	23 (01.87)	09 (00.73)
Electronic References Services	397 (32.43)	208 (16.99)	462 (37.74)	93 (07.59)	64 (05.22)
Literature Search Service	208 (16.99)	199 (16.25)	141 (11.51)	107 (08.74)	569 (46.48)
E-Document Delivery Services	246 (20.09)	235 (19.19)	406 (33.16)	224 (18.30)	113 (09.23)
Figures in parentheses indicate percentage					

### 5.9. Problems faced while accessing E-resources

The problems faced while accessing e-resources by the faculty members have been summarized in Table-9. The Table-9 depicts that 586 (47.87%) of faculty members face problem due to slow internet connectivity with a mean value of 3.274744 and SD 1.465628, followed by 479 (39.13%) face problem due to too much time consuming with a mean value of 2.546973 and SD 1.680474, 432 (35.29%) face problem due to unfamiliarity with search methods with mean value 2.537037 and SD 1.642468, 355 (29.00%) face problem due to version problem with mean value 2.67042 and SD 1.697089, 343 (28.02%) face problem due to various types of file format with mean value 2.897959 and SD 1.592098. About 319 (26.06%) of faculty members face power problems with a mean value of 2.949843 and SD 1.513987.

**Table-9: Problems faced while accessing E-resources**

Problems Faced	Civil Engg. (N=279)	Mech. Engg. (N=242)	Elect Engg (N=157)	Comp. Sci. Engg. (N=349)	Biotech. and Chem.Engg. (N=87)	Basic Sciences (N=110)	Total (N=1224)	Mean	SD
Slow internet connectivity	86 (30.82)	126 (52.06)	61 (38.85)	208 (59.59)	41 (47.12)	64 (58.18)	586 (47.87)	3.27	1.478
Too much time consuming	192 (68.81)	98 (40.49)	46 (29.29)	59 (16.90)	38 (43.67)	46 (41.81)	479 (39.13)	2.55	1.68
Type of files Format	78 (27.95)	102 (42.14)	33 (21.01)	62 (17.76)	25 (28.73)	43 (39.09)	343 (28.02)	2.90	1.59
Unfamiliarity with Search method	146 (52.32)	132 (54.54)	52 (33.12)	17 (04.87)	37 (42.52)	48 (43.63)	432 (35.29)	2.54	1.64
Version problem	122 (43.72)	88 (36.36)	33 (21.01)	41 (11.74)	32 (36.78)	39 (35.45)	355 (29.00)	2.67	1.60
Power problem	67 (24.01)	91 (37.60)	18 (11.46)	93 (26.64)	16 (18.39)	34 (30.90)	319 (26.06)	2.95	1.51
Note: Figures in parentheses indicate percentage and because of multiple choice options the percentage is exceeded to more than 100%.									

The Table-9 also depicts that 192 (68.81%) of faculty members of Civil Engineering face problem while accessing e-resources due to too much time consuming, followed by 132 (54.54%) of Mechanical Engineering face problem due to unfamiliarity with search method,



61 (38.85%) of Electrical engineering, 208 (59.59%) Computer Science engineering, 41 (47.12%) of faculty members Biotechnology and Chemical engineering and 64 (58.18%) of Basic Sciences face problem due to the due to slow internet connection while accessing e-resources.

### 5.10. Opinion on impact of ICT on academic performance

The information gathered about the impact of ICT on academic performance by the faculty members has been summarized in Table-10. The Table-10 depicts that 405 (33.08%) of faculty members 'Strongly Agree' with the statement that the number of research papers has increased, followed by 401 (32.76%) of faculty members 'Agree' with the statement that they developed self-confidence in their academic activities, 521 (42.56%) of faculty members 'Agree' with the statement that improved motivation and teaching skills, 502 (41.01%) of faculty members 'Strongly Agree' with the statement that expedited (Speed up) the research process, 698 (57.02%) of faculty members 'Strongly Agree' with the statement that keep them up-to-date in my subject field, 491 (40.11%) of faculty members 'Agree' with the statement that dependency on the internet has increased and 577 (45.50%) faculty members 'Strongly Agree' with the statement that use of conventional (print) documents has decreased.

**Table-10: Opinion on impact of ICT on academic performance**

Statement	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Number of research papers have increased	405 (33.08)	394 (32.18)	142 (11.60)	186 (15.19)	97 (07.92)
Developed self confidence in their academic activities	348 (28.43)	401 (32.76)	119 (09.72)	224 (18.30)	132 (10.78)
Improved motivation and teaching skills	239 (19.52)	521 (42.56)	349 (28.51)	43 (03.51)	72 (05.88)
Expedited (Speed up) the research process	502 (41.01)	403 (32.92)	250 (20.42)	38 (03.10)	31 (02.53)
Keep them up-to-date in my subject field	698 (57.02)	384 (31.37)	101 (08.25)	14 (01.14)	27 (02.20)
Dependency on the internet has increased	402 (32.84)	491 (40.11)	206 (16.83)	82 (06.69)	43 (03.51)
Use of Conventional (print) documents has decreased	577 (45.50)	408 (33.33)	40 (03.26)	75 (06.12)	124 (10.13)

Note: Figures in parentheses indicate percentage

### 5.11. Suggestions for enhancing ICT literacy competencies

The information related to suggestions for enhancing ICT literacy competencies by faculty members has been summarized in Table-11. The Table-11 depicts that 322 (26.30%) of faculty members 'Disagree' with the suggestion 'More networked computers should be made available in the department' to enhance ICT literacy competencies, followed 413 (33.74%) of faculty members 'Agree' with the suggestion 'Each department should have the computers with internet connection', 616 (50.32%) of faculty members 'Strongly Agree' with the suggestion 'Slow internet connection should be improved', 496 (40.52%) of faculty members 'Agree' with the suggestion 'Providing information and ICT Literacy training programs for faculty members and research scholars and also encourage them in lifelong learning', 464 (37.90%) of faculty members 'Agree' with the suggestion 'Need of well-designed library websites with links to academic resources', 498 (40.68%) of faculty members

‘Strongly Agree’ with the suggestion ‘Need of well-equipped classrooms /laboratory with PC’s, LCD projectors, etc.’ and 607 (49.59%) of faculty members ‘Strongly Agree’ with the suggestion ‘Need of dedicated Wi-Fi connectivity in the campus’.

**Table-11: Suggestions for enhancing ICT literacy competencies**

Suggestions	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
More networked computers should be made available in the department	289 (23.61)	203 (16.58)	182 (14.86)	322 (26.30)	228 (18.62)
Each department should have the computers with internet connection	406 (33.16)	413 (33.74)	326 (26.63)	38 (03.10)	41 (03.34)
Slow internet connection should be improved	616 (50.32)	314 (25.65)	229 (18.70)	35 (02.85)	30 (02.45)
Providing information and ICT Literacy training programs for faculty members and research scholars and also encourage them in lifelong learning	313 (25.57)	496 (40.52)	201 (16.42)	125 (10.21)	89 (07.27)
The need for well-designed library websites with links to academic resources	392 (32.02)	464 (37.90)	298 (24.34)	44 (03.59)	26 (02.12)
Need of well-equipped classrooms /laboratory with PC’s, LCD projectors, etc.	498 (40.68)	393 (32.10)	299 (24.42)	21 (01.71)	13 (01.06)
Need of dedicated Wi-Fi connectivity in the campus	607 (49.59)	403 (32.92)	201 (16.42)	10 (00.81)	03 (00.24)
Note: Figures in parentheses indicate percentage					

## 6. Suggestions

Based on the above results, the following suggestions are made for further improvement in Information and Communication Technology Literacy Competencies among Faculty Members of Engineering Colleges.

- The faculty members should be trained in using various ICT enabled tools and software related to it.
- The faculty members should further improve their information searching skills to make better use of mostly available web information resources.
- The internet speed should be increased to save user valuable time and speed up the information search and retrieval process.
- The electronic resources publishers/distributors should provide an online help menu on the search page to better utilize their electronic information resources.
- The web search engines retrieve information based on the metadata. It is strongly suggested that the search engine should have content-based information search facilities for effective information retrieval.
- The libraries should organize training, seminars and workshops for the users at regular intervals to keep users in tune with the latest ICT-enabled technologies.

## 7. Conclusion

The ICT enables resources and services made available via the internet has become an inseparable part of today’s educational system. Due to rapid development in Internet and Information Technology, large amounts of educational resources are being produced, distributed and accessed in the electronic format. The dependency on internet-based services is increasing everyday. Users of engineering institutions depend more on information

resources available through the internet to meet their academic and research needs. The libraries should organize training, seminars and workshops for the users at a regular interval of time to keep them in tune with the latest ICT-enabled technologies and enhance the ICT Literacy Competencies. The users should become familiar with the latest online information search techniques to access and retrieve relevant information from the Web.

**References:**

1. Ramamurthy, P., Sridevi, E. and Ramu, M. (2015). Information Literacy Search Skills of Students in Five Selected Engineering Colleges in Chittoor District, Andhra Pradesh. A Perspective International Research: *Journal of Library and Information Science*, 5(1), 107-121.
2. Baikady, M. R. and Mudhol, M. V. (2013). Computer Literacy and the Use of Web Resources: A Survey on the Medical Faculty and Students. *International Journal of Information Dissemination and Technology*, 3(1), 27-32.
3. Deepmala, M.A. and Shivraj, K.S. (2016). Information Literacy Skills among Women Faculty Members in Engineering Colleges in Coimbatore, Tamil Nadu: A Study. *Asian Journal of Research in Social Sciences and Humanities*, 6(6), 2064-2076. Retrieved from <https://aijsh.com/shop/articlepdf/2016/06/1464760585162abstract.pdf>.
4. Kiran Kumar, G and Kumbar, Mallinath (2015). Use of Electronic Information Resources and Search Pattern by the Faculty of Autonomous Engineering Colleges in Karnataka: A Survey. *SRELS Journal of Information Management*, 52(4), 259-266.
5. Thirmagal and Mani (2016). Information Literacy Skills among Faculty Members of Engineering Colleges in Tirunelveli District, Tamil Nadu: A Study. *International Research Journal of Multidisciplinary Science and Technology*, 1(6), 337-344. Retrieved from <http://nebula.wsimg.com/05f19812b5e83eead4e7e1171b4c4424?AccessKeyId=94ED799FB69CB80A1EB7&disposition=0&alloworigin=1>
6. Kiran Kumar, G and Kumbar, Mallinath (2012). E- Information Search Pattern by the faculty of Autonomous Engineering Institutions in Karnataka: A Survey. *Library Progress (International)*, 32(1), 123-132.

