

## USE OF ICT FACILITIES BY FACULTY MEMBERS IN ENGINEERING COLLEGES IN ANANTAPUR DISTRICT: A CASE STUDY

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### ABSTRACT

*The Information Technology explosion and its applications in every aspect of life have changed the entire scenario of the present world. The recent development in Information and communication Technologies (ICT) and globalization of information made easy for individuals to access information from any where, anytime. This paper focuses on availability of ICT equipments and facilities in engineering colleges. This paper also discusses level of usage of ICT facilities/sources by the members of engineering faculty.*

**Key words:** Information Technology (IT), Information and Communication Technology (ICT), Software, Hardware, Engineering faculties.

### INTRODUCTION

According to Dictionary of Physics, Oxford University Press, "Information Technology (IT) is the use of computers and telecommunications equipment to store, retrieve, transmit and manipulate data". The term is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones. Several industries are associated with information technology, such as computer hardware, software, electronics, semiconductors, internet, telecom equipment and computer services. Information is a dynamic perpetual resource that affects all disciplines and all works of life.

The UNESCO stated that "ICT is a Scientific, technical and engineering discipline and management technique used in handling information is application and association with social, economical and cultural matters".

The availability of the right information at the right time in the right form is of utmost importance to users for their knowledge and development activities. Application of ICT in Education, Research and Development has become inevitable in the present era of information explosion and wide spread use of digital information resources. The result of the present study is expected to provide understanding on the state-of-art of ICT applications and to prove that it is useful for suitable modification or improvements for better availability and usage of the same.

## **ICT AND EDUCATION**

ICT stands for Information and Communication technologies and are defined, for the purposes of this primer, as a “diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.” These technologies include computers, the internet broadcasting technologies (radio and television), and telephony.

In recent years there has been a groundswell of interest in how computers and the internet can best be harnessed to improve the efficiency and effectiveness of education at all levels and in both formal and non-formal settings. For developing countries ICTs have the potential for increasing access and improving the relevance and quality of education. It thus represents a potentially equalizing strategy for developing countries.

Teachers are learners no longer have to rely solely on printed booked and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the interest and the world wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at any time of the day and by an unlimited number of people. This is particularly significant for many universities in developing countries, and even some in developed countries, that have limited and outdated library resources. ICTs also facilitate access to resource persons- mentors, experts, researched, professionals, business leaders, and peers-all over the world.

## **REVIEW OF LITERATURE**

Hosseini (2008) opined that Information and communication Technology (ICT) provides several facilities and possibilities for educational administrators to do their tasks. Using ICT by Deans of faculties led to effectiveness and productivity of higher education in competitive world. Research findings showed that Heads of faculties use these technologies in planning function. It was used by them in data collection, decision making, operation planning, budget planning and classroom programming. The important obstacles to using these technologies to do managerial duties are, low level of staff specialized knowledge, lack of professional human resources, lack of financial resources and budget.

Sayed and Leila (2009) studied the factors affecting the use of Information and Communication Technologies by agricultural faculty members. The findings regression analysis showed that 61.2% variance of ICTs usage extent was explained by two variables including respondents' level of knowledge and skill in applying ICTs and availability of ICTs to faculty members.

Krishnaveni and Meenakumari (2010) opined that a good higher education system is required for overall prosperity of a nation. A tremendous growth in the higher education sector had made the administration of higher education institutions complex. This study was under taken to identify the various functional areas to which ICT is deployed for information administration in higher education institutions and to find the current extent of usage of ICT in all these functional areas pertaining to information administration.

Mohammad (2011) expressed that the Internet is the transport vehicle for the information stored in files or documents on another computer. It carried together various information services, such as electronic mail, online chat, file transfer, and the interlinked Web pages and other documents

of the World Wide Web. This paper explored broadly the importance of Internet with regard to access of information sources and utilities for library patrons in academic organizations and institutions.

### **OBJECTIVES OF THE STUDY**

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

1. To know the availability of ICT facilities in engineering colleges in Anantapur district
2. To know the levels of awareness of members of faculty on ICT
3. To know the level of usage of ICT facilities by the members of faculty

### **SCOPE OF THE STUDY:**

The study is mainly focused on ICT facilities using by the faculty members in selected Engineering colleges (4) in Anantapur District. They are JNTU-A College of engineering, Intel Engineering College, Sri Krishnadevara Engineering College and Gates Institute of Technology. The colleges which were established before 2007 were selected for the present study.

### **METHODOLOGY**

The methodology adopted is the questionnaire based survey method for data collection. The total population is 400 which represents faculty of selected engineering colleges in Anantapur District. A sample of 200(50%) was selected through simple random sampling method. The researcher has distributed 200 questionnaires to the respondents, and 164(82%) filled in questionnaires are received from the respondents.

### **ANALYSIS OF DATA**

In this paper, data collected from respondents are analyzed for finding the observations by using simple percentile and Anova test.

The gender of the sample has been presented in the table 1.

**Table 1 Gender of the Respondents**

<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
Male	97	59.1
Female	67	40.9
<b>Total</b>	<b>164</b>	<b>100</b>

The table shows that 97 respondents(59.1%) are males and 67 respondents(40.9%) are females. It is above concluded that more than 59.1 per cent of the respondents are males.

## Educational Qualifications

The educational status of the respondents has been presented in the Table 2

**Table 2 Educational Qualifications of respondents**

Educational Qualifications	Frequency	Percent
B.Tech.	39	23.8
M.Tech.	91	55.5
Ph.D.	34	20.7
<b>Total</b>	<b>164</b>	<b>100</b>

The table portrays that majority of the respondents, i.e. 91 (55.5 %) have M. Tech. degree, 39 respondents(23.8 %) have B.Tech degree and 34 respondents (20.7 %) are Doctorates. Above all, it is concluded that around 56 per cent of the respondents have M.Tech Degree.

## Availability of ICT equipments

The ICT comprises many equipment, viz. Computer, OHP, Laptop, Printers, Scanners, Fax, I pad, Audio visual equipment, etc. for serving many purposes for teaching faculty for their teaching and research. Seyed and Leila(2009) evaluated the frequently used ICT equipments in Agricultural universities in Iran. The available ICT equipments in the college have been elicited and presented in Table 3

**Table 3  
Availability of ICT equipments**

ICT equipments	Yes	No	Total	
	N (%)	N (%)	No	%
Computer	163 (99.4)	1(0.6)	164	100
Overhead Projector	135 (82.3)	29(17.7)	164	100
Laptop	125 (76.2)	39(23.8)	164	100
Tablet PC	59 (36)	105(64)	164	100
Mobile Phone/Telephone	147 (89.6)	17(10.4)	164	100
Printer	158 (96.3)	6(3.7)	164	100
Scanner	149 (90.9)	15(9.1)	164	100
Smart card	77 (47)	87(53)	164	100
CD-Net server	102 (62.2)	62(37.8)	164	100
FAX	134 (81.7)	30(18.3)	164	100
Xerox	154 (93.9)	10(6.1)	164	100
Audio visual sources (T.V and Radio)	96 (58.5)	68(41.5)	164	100
I-pad	58 (35.4)	106(64.6)	164	100
Digital Camera	98 (59.8)	66(40.2)	164	100
Handy camera	89 (54.3)	75(45.7)	164	100
Web camera	88 (53.7)	76(46.3)	164	100

(NOTE: numbers in parentheses indicate percentages)

The above table portrays that 99.4 percent of the respondents mentioned that they have computer facility, 82.3 percent of the respondents have Overhead Projector, 76.2 percent of the respondents have Laptop, 89.6 percent of the respondents have mobile phone/telephone, 96.3 percent of the respondents have Printer, 93.9 percent have Xerox facility, 90.9 percent of the respondents have scanner, 81.7 percent of the respondents have FAX etc. It can also be observed from the table that 61.6 percent of the respondents do not have I-Pad, 53 percent of the respondent do not have smart card, and 64 percent do not have tablet PCs. It can be concluded that majority (99.4%) of the respondents mentioned that they have computer facility.

### Frequency of usage of ICT equipments

This is the age of dotcom and usage of ICT facilities has been immensely increasing. The usage varies from person to person and purpose to purpose over time and space. The information on how frequently the respondents avail the ICT facilities has been elicited and presented in Table 4

**Table 4 Frequency of usage of ICT equipments**

Frequently ICT equipments	Daily	Weekly	Monthly	Never	Total	
	N (%)	N (%)	N (%)	N (%)	N	%
Computer	152(92.7)	11(6.7)	1 (0.6)	0(0)	164	100
Overhead Projector	9(5.5)	75(45.7)	51(31.1)	29(17.7)	164	100
Laptop	78(47.6)	30(18.3)	21 (12.8)	35(21.3)	164	100
Tablet PC	19(11.6)	27(16.5)	12(7.3)	106(64.6)	164	100
Mobile Phone/Telephone	120(73.2)	11(6.7)	18(11)	15(9.1)	164	100
Printer	103(62.8)	55(33.5)	3(1.8)	3(1.8)	164	100
Scanner	56(34.1)	65(39.6)	30(18.3)	13(7.9)	164	100
Smart card	18(11)	35(21.3)	20(12.2)	91(55.5)	164	100
CD-Net server	38(23.2)	31(18.9)	19(11.6)	76(46.3)	164	100
FAX	25(15.2)	38(23.2)	45(27.4)	56(34.1)	164	100
Xerox	81(49.4)	53(32.3)	19(11.6)	11(6.7)	164	100
Audio visual sources (T.V and Radio)	37(22.6)	39(23.8)	35(21.3)	53(32.3)	164	100
I-pad	14(8.5)	32(19.5)	19(11.6)	99(60.4)	164	100
Digital Camera	17(10.4)	35(21.3)	40(24.4)	72(43.9)	164	100
Handy camera	15(9.1)	26(15.9)	46(28)	77(47)	164	100
Web camera	18(11)	32(19.5)	34(20.7)	80(48.8)	164	100

(NOTE: numbers in parentheses indicate percentages)

The above table portrays that 92.7 percent of the respondents use computer daily, 73.2 percent of the respondents use mobile phone/telephone, 62.8 percent of the respondents use printer, 49.4 percent of the respondents use Xerox etc. Moreover, 73.2 percent of the respondents use overhead Projector weekly, 33.5 and 39.6 percent of the respondent use printer and scanner weekly and 27.5 percent of the respondents use FAX weekly. This results shows that most of the respondents are familiar and using the ICT equipment.

It can be concluded that majority (99.4%) of the respondents use computer daily.

### ICT Facilities available in the college

Walmiki and Ramakrishnegowd (2009) have studied the ICT infrastructure facilities in the libraries of Karnataka. Dhanavandhan, Mohammed and Mani (2008) have studied the use of information and communication technology (ICT) Tools by librarians and faculty.

The information, on the other ICT facilities available in the colleges has been elicited and presented in Table 5

**Table 5**  
**Availability of ICT Facilities**

ICT Facilities	Yes	No	Total	
	N (%)	N (%)	N	%
Internet	161(98.2)	3(1.8)	164	100
Wi-Fi	75(45.7)	89(54.3)	164	100
Video conferencing	80(48.8)	84(51.2)	164	100
Video Lectures	125(76.2)	39(23.8)	164	100
CD-ROM/DVD	136(82.9)	28(17.1)	164	100
Bibliographic Databases	84(51.2)	80(48.8)	164	100
Full text databases	109(66.5)	55(33.5)	164	100
Online databases	122(74.4)	42(25.6)	164	100
E-Books	129(78.7)	35(21.3)	164	100
E-Mail	144(87.8)	20(12.2)	164	100
E-Journals	126(76.8)	38(23.2)	164	100
Telnet	70(42.7)	94(57.3)	164	100
FTP	67(40.9)	97(59.1)	164	100
Library's web site	94(57.3)	70(42.7)	164	100
Online Public Access Catalogue (OPAC)	75(45.7)	89(54.3)	164	100
Web OPAC	64(39)	100(61)	164	100
Electronic discussion groups	65(39.6)	99(60.4)	164	100
Bulletin Board Service	55(33.5)	109(66.5)	164	100
Social Networks (Face book, Twitter, blogs etc.)	121(73.8)	43(26.2)	164	100
Online information sources (Dictionaries, Encyclopedias, standards, etc.)	123(75)	41(25)	164	100
NPETEL (National Program on Technology Enhance Learning)	108(65.9)	56(34.1)	164	100
Class room streaming	89(54.3)	75(45.7)	164	100
E-Learning	110(67.1)	54(32.9)	164	100

(NOTE: numbers in parentheses indicate percentages)

The above table shows that 98.2 percent of the respondents mentioned that they have Internet facility, 87.8 percent of the respondents have the facility of E-mail, 78.7 percent of the respondent have E-Journals. But 54.3 percent of the respondents mentioned that they do not have Wi-Fi facility, 51.2 do not have video conference facility. 66.5 percent, 60.4 percent, and 57.3 percent respondents mentioned that they do not have Bulletin Board Service, Electronic discussion groups and Telnet facilities respectively. 54.3 percent OPAC.

It can be concluded that majority (98.2%) of the respondents mentioned that they have Internet facility.

### Frequency of Using ICT Facilities

The information on the frequency of using other ICT facilities by the respondents has been elicited and presented in Table 6

**Table 6 Frequency of Using ICT Facilities**

Frequently use ICT Facilities	Daily	Weekly	Monthly	Never	Total	
	N (%)	N (%)	N (%)	N (%)	N	%
Internet	153(93.3)	10(6.1)	1(0.6)	0(0)	164	100
Wi-Fi	67(40.9)	23(14)	10(6.1)	64(39)	164	100
Video conferencing	19(11.6)	46(28)	30(18.3)	69(42.1)	164	100
Video Lectures	30(18.3)	65(39.6)	32(19.5)	37(22.6)	164	100
CD-ROM/DVD	47(28.7)	73(44.5)	21(12.8)	23(14)	164	100
Bibliographic Databases	28(17.1)	55(33.5)	41(25)	40(24.4)	164	100
Full text databases	43(26.2)	47(28.7)	34(20.7)	40(24.4)	164	100
Online databases	42(25.6)	58(35.4)	31(18.9)	33(20.1)	164	100
E-Books	64(39)	59(36)	20(12.2)	21(12.8)	164	100
E-Mail	99(60.4)	40(24.4)	10(6.1)	15(9.1)	164	100
E-Journals	57(34.8)	49(29.9)	27(16.5)	31(18.9)	164	100
Telnet	35(21.3)	30(18.3)	18(11)	81(49.4)	164	100
FTP	30(18.3)	23(14)	19(11.6)	92(56.1)	164	100
Library's web site	43(26.2)	43(26.2)	21(12.8)	57(34.8)	164	100
Online Public Access Catalogue (OPAC)	39(23.8)	19(11.6)	26(15.9)	80(48.8)	164	100
Web OPAC	30(18.3)	24(14.6)	33(20.1)	77(47)	164	100
Electronic discussion groups	28(17.1)	28(17.1)	36(22)	72(43.9)	164	100
Bulletin Board Service	29(17.7)	40(24.4)	27(16.5)	68(41.5)	164	100
Social Networks (Face book, Twitter, blogs etc.)	68(41.5)	47(28.7)	18(11)	31(18.9)	164	100
Online information sources (Dictionaries, Encyclopedias, standards, etc.)	70(42.7)	48(29.3)	15(9.1)	31(18.9)	164	100
NPETEL (National Program on Technology Enhance Learning)	46(28)	39(23.8)	32(19.5)	47(28.7)	164	100
Class room streaming	53(32.3)	33(20.1)	22(13.4)	56(34.1)	164	100
E-Learning	66(40.2)	39(23.8)	20(12.2)	39(23.8)	164	100

(NOTE: numbers in parentheses indicate percentages)

The above table presents that 93.3 percent of the respondents use internet daily, 60.4 percent of the respondents use email daily, 39.0 percent of the respondents use e-books daily, 34.8 percent of the respondents use e-journals daily, and 26.2 percent of the respondents use library website daily. It can also be observed that 44.5 percent respondents use CD-ROMs weekly and 56.1 percent of the respondents never use FTP.

It can be concluded that majority (93.3%) of the respondents use Internet daily.

**Table 7**

One way ANOVA test used for ICT equipments and usage of ICT facilities between educational qualification of B.Tech,M.Tech and Ph.D's.

ANOVA : VARIABLE = EDUCATION						
Variables	Qualification	N	Mean	Std. Deviation	f-value	p value
ICT equipments	B.Tech	39	9.18	3.78	9.30	0.00**
	M.Tech	91	11.79	3.09		
	PhD	34	11.79	3.27		
	<b>Total</b>	<b>164</b>	<b>11.17</b>	<b>3.47</b>		
Frequency use of ICT equipments	B.Tech	39	21.41	11.42	2.95	0.06*
	M.Tech	91	24.88	8.82		
	PhD	34	26.59	8.80		
	<b>Total</b>	<b>164</b>	<b>24.41</b>	<b>9.61</b>		
ICT Facilities	B.Tech	39	10.90	6.03	10.61	0.00**
	M.Tech	91	15.32	5.11		
	PhD	34	15.09	4.12		
	<b>Total</b>	<b>164</b>	<b>14.22</b>	<b>5.46</b>		
Frequency to use ICT Facilities	B.Tech	39	26.49	15.62	4.53	0.01**
	M.Tech	91	32.85	13.85		
	PhD	34	35.62	10.44		
	<b>Total</b>	<b>164</b>	<b>31.91</b>	<b>13.97</b>		

\*\* =Significant at 0.01 level

\* =Not Significant at 0.05 level

The above table shows that there is significant difference in the opinion on ICT equipments among respondents possessing different the educational qualifications viz. B.Tech;M.Tech and Ph.D . The response value is 9.30. Which is significant at 0.01 level.

The frequency of use of ICT equipments is not significant. The ANOVA value is 2.95 which is less than table value at 0.05 level.

It is clear from the above table that there is significant difference in the opinion on the ICT facilities available in the colleges among the respondents. The ANOVA value is 10.61 which is significant at 0.01 level.

It is also clear from the table that the frequency use of ICT facilities is also significant among the respondents of B.Tech, M.Tech and Ph.D. faculty members. The ANOVA value is 4.53 and significant at 0.01 level.

## FINDINGS OF THE STUDY

1. Majority (99.4%) of the respondents mentioned that they have computer facility
2. Majority (99.4%) of the respondents use computer daily
3. Majority (98.2%) of the respondents mentioned that they have Internet facility
4. Majority (93.3%) of the respondents use Internet daily



## **SUGGESTIONS:**

- As it is clear from the analysis that majority of the respondents are using Computer and Internet, many of them are not using services like Bulletin Board Services, Electronic discussion groups and FTP etc, available on the Internet. Hence awareness programs are to be conducted by the respective institutions.
- It is proved fact that ICT facilitates quality education. Keeping this in view the Government, by institutions, and professional associations need to put there sincere effort in promotion of ICT in higher and Technical educational institutions.

## **CONCLUSION**

ICT is the order of the day. Without it no human activity is complete. Hence, the higher education which plays a greater role in National development has to go hand in hand with ICT. Keeping this in view the present study has been taken up. Basing on the result of the study, the researcher feels that some ICT facilities like Wi-Fi, Use of e-journals, Video conferencing etc. are to be strengthened.

## **REFERENCES**

1. Daintith, John, ed. "Information Technology", A Dictionary of Physics, Oxford University Press, <http://www.oxfordreference.com>,retrived 1 August (2012).
2. Chandler, Daniel and Munday, Rod, "Information Technology", A Dictionary of Media (firsted.) Oxford University Press, <http://www.oxfordreference.com>,retrived 1 August (2012).
3. Hossein, Zainallypoor. "Administration of faculties by Information and Communication Technology and Its Obstacles". International Journal of Education and Information Technologies. Vol. 1:2(2008): p54-60.
4. Seyed Mohammad and Leila Safa. "Factors Affecting the use of Information and Communication Technologies (ICTs) Iranian Agricultural Faculty Members". World applied Sciences Journal, Vol.6:8 (2009): 11-1127.
5. Krishnaveni, R. and Meenakumari, J. "Usage of ICT for Information Adminstration in Higher Education Institutions- A study" International Journal of Environmental Science and Development, Vol.1:3, August (2010).
6. Mohammad Aqil. "Use of the Internet by Research Scholars and Post-Graduate Students of the science and Faculty of Aligarh Muslim University" Library Philosophy and Practice (2011).
7. Walmiki,R.H. and Ramakrishnegowd, K.C. "ICT Infrasrtucture in University Libraries Of Karnataka". Anals of Library and Information Studies. Vol.56 (2009): p236-241.
8. Dhanavandan. S, Mohammad Esmail and Mani, V. "A Study of Use of Information and Communication Technology(ICT) Tools By Librarians. Library and Philosophy and Practice (2008)