

**USE OF INFORMATION COMMUNICATION TECHNOLOGY BASED
SERVICES BY FACULTY MEMBERS AND STUDENTS OF ONE
PREMIER ENGINEERING COLLEGE OF ODISHA**

DR. SUNIL KUMAR SATPATHY

Dy.Librarian
National Institute of Technology
G.E.Road, Raipur-492010(C.G)
e-mail: drsksatpathy@gmail.com

&

RABINDRA K. MAHARANA

Technical(Library)
NISER, Bhubaneswar, Orissa
e-mail: maharana.rabindra@gmail.com

&

SUVENDU KUMAR PANDA

Librarian
D.A.V.Public School, Balasore, Odisha

ABSTRACTS:

The rapid development of ICT ,along with the tremendous growth of literatures in all field of knowledge, changing users inclination/demand for online resources, shrinking library budget, development of various library networks and consortia etc have compelled almost all libraries to develop various ICT tools and services to cater their users properly. The paper describes the objectives and limitations of the study. Analyses the collected data with suitable statistical techniques and discusses about the analyzed data. Summarizes the major findings of the study . Concludes with the remarks that in the age of ICT, the importance of ICT based library services cannot be ignored hence cannot be delayed. The maximum use of ICT based library services will increase the teaching and learning process of engineering colleges of Odisha.

KEYWORDS: ICT, library, Faculty members, students, CVRCE

1. INTRODUCTION

Academic libraries from its inception have played an important role in providing study and research materials to their users. But the last few decades have witnessed sea changes in the collection, organization and services of academic libraries. This is only because of the impact of Information & Telecommunication Technology (ICT). The term ICT includes any communication device or application, computer and network hardware and software, satellite systems and so on.

The rapid development of ICT, along with the tremendous growth of literatures in all field of knowledge, changing users inclination/demand for online resources, shrinking library budget, development of various library networks and consortia etc have compelled almost all libraries to develop various ICT tools and services to cater their users properly. **Dilevko and Harris (1997)** have opined that the traditional library is undergoing significant changes due to the electronic revolution, which in its various manifestations has affected nearly every aspects of information provision. The ICT has now-a-days become an important technology in academic institutions as it plays a very important role in meeting information needs of the researchers and institution as a whole.

ICT has affected the system and services of engineering college libraries to a great extend. Availability and access of e-resources (both online and offline) is one of the major impact of ICT and these resources have become an integral part of any modern library collection. Accordingly the users' skills and trends towards the use of ICT based library services need to be examined by libraries regularly to update and provide better library services to users. The present study is an attempt to find out the use of various ICT based library services by the faculty members and students of C.V.Raman College of Engineering, Bhubaneswar, which is one of the premier engineering college of Odisha.

2. OBJECTIVES OF THE STUDY

The basic objective of the present paper is to make a study on the usage of ICT based library services by the faculty members and students of C. V.

Raman College of Engineering, Bhubaneswar, Odisha. However the other objectives of the study are:

- a) To find out the level, frequency and purpose of using various ICT based services by the faculty members and students.
- b) To find out the usage pattern of ICT based services by them
- c) To find out the impact of ICT on their study and research.
- d) To find out the problems incurred by the faculty members and students in using ICT based library services.

3. LIMITATIONS OF THE STUDY

The present study was limited to the faculty members and post graduate students of C.V. Raman College of Engineering, Bhubaneswar , Odisha during 2010.

4. SIZE OF SAMPLE

The target population of the present study consists of the faculty members and Post Graduate students of CVRCE during 2010. The total faculty members of different departments are 150 in numbers, which includes faculty members of different categories such as Professor, Assistant Professor, Sr. Lecturer and Lecturer. Similarly the Post graduate students includes 45 numbers of Master of Technology (M.Tech) students and 60 numbers of Master of Business Administration (M.B.A) students

5. REVIEW OF LITERATURE

A number of researchers have conducted study on the use of ICT services.

Al-Ansari(2011) in his study explores the application of information technology in various operations and services in special libraries in Kuwait .He finds that More than one fourth of the libraries are still using manual systems in their library operations and services. Lack of adequate personnel, ICT training programs, and low priority of libraries within their organization are major obstacles for ICT application in special libraries.

Sampath Kumar and Biradar((2010) in their study examines the use of information communication technology (ICT) in 31 college libraries in Karnataka, India by investigating the ICT infrastructure, current status of library automation, barriers to implementation of library automation and also librarians' attitudes towards the use of ICT. They find that application of ICT in Indian college libraries has not reached a very high level. Lack of budget, lack of manpower, lack of skilled staff and lack of training are the main constraints for not automating library activities.

Haneefa and Abdul Shukkoor(2010) in their study ascertains the Information and Communication Technology (ICT) literacy among the library professionals of Calicut University. They find that the use of ICT-based resources and services, library automation software, and general purpose application software is high among the Professional Assistants than the Junior Librarians and Assistant Librarians. The use of digital library and institutional repository software is very low among the library professionals. Majority of the professionals had confidence in routine ICT and Internet tasks.

Anie and Achugbue(2009) in their study examines the current state of Information and Communication Technology (ICT) policies in the provision and utilization of library services and resources. They find that that most Nigerian Universities have not adopted library ICT policies, and where the policies have been adopted and implemented, the libraries are faced with various constraints.

Haneefa (2007) in his study investigates the application of information and communication technologies (ICT) in special libraries in Kerala, India. He finds that though the libraries had hardware, software, and communication facilities to some extent, ICT-based resources and services were not reaching the users to the expected extent.

6. DESIGN/ METHODOLOGY

The study is based on survey method and questionnaire technique is used for Survey. Accordingly a structured questionnaire was designed to collect data from the faculty members and post graduate students of CVRCE keeping in mind the basic objectives of the study. The questionnaires were distributed

personally to collect data from the respondents i.e. 150 faculty members and 105 post graduate students. In spite of repeated request 125 faculty members and 83 Post graduate students responded with the filled in questionnaires with a response rate of 83.3% and 79.04% respectively. The questionnaires were edited where necessary.

To make data analysis statically sounds, in some cases statistical techniques such as percentage, mean, standard deviation and mean deviation are used. The mean and standard deviation are calculated to ascertain the level of variations amongst the variables by using the following computed formula:

$$\text{Mean Deviation } (\delta) = \bar{x} - X$$

Where, x = number of response

$$\bar{X} = \text{number of responses}$$

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum (x - X)^2}{N}}$$

Where, $\sum (x - X)^2$ = sum of the squares of mean deviation

7. RESULTS AND DISCUSSION

The analysis of data of Table-1 revealed that out of total 255 respondents selected for the present study, 208 responded with the filled in questionnaire with a response rate of 81.57%. Further among 83 post graduate student respondents, who responded with the filled in questionnaire, 35 were M.Tech students (77.77%) and 48 were M.B.A students (80%). Similarly among 125 responded faculty members, 11 were Professors (64.71%), 31 were Associate Professors (83.79%) and 83 were Assistant professors (86.46%).

Table-1: Category of Respondents

| Category | | Total no. of respondents | No. of respondents responded | Individual category-wise percentage |
|--------------------|---------------------|--------------------------|------------------------------|-------------------------------------|
| Post graduate | M. Tech | 45 | 35 | 77.77 |
| | M.B. A. | 60 | 48 | 80 |
| | Total | 105 | 83 | 79.05 |
| Faculty Member | Professor | 17 | 11 | 64.71 |
| | Associate Professor | 37 | 31 | 83.79 |
| | Assistant Professor | 96 | 83 | 86.46 |
| | Total | 150 | 125 | 83.33 |
| Grand Total | | 255 | 208 | 81.57 |

Knowledge on ICT products and services

Data were collected from the respondents to assess their knowledge on various ICT based services. The self proclaimed data of respondents as analyzed in Table-2 showed that out of 208 respondents, 129 (62.02%) had excellent knowledge, followed by 49 (23.56%) had good knowledge, 26 (12.5%) had average knowledge and 4 (1.92%) had poor knowledge on ICT services. Further the analysis revealed that more percentage of P.G students (58.54%) were excellent on ICT knowledge than faculty members (46.6%).

Table-2: Level of Knowledge

| Respondent | Excellent | Good | Average | Poor | Total |
|-----------------|-------------|------------|-----------|----------|-----------|
| P.G. Students | 71 (85.54) | 8 (9.64) | 4 (4.82) | -- | 83 (100) |
| Faculty members | 58 (46.4) | 41 (32.8) | 22 (17.6) | 4 (3.2) | 125 (100) |
| Total | 129 (62.02) | 49 (23.56) | 26 (12.5) | 4 (1.92) | 208 (100) |

Note: Figures in parenthesis denote percentage.

Use of ICT based services

In the age of ICT, the inclinations of library users towards ICT based services are increasing day by day. Data were collected on the use of various ICT based library services by the respondents. The data were tabulated as follows.

Table-3: Use of ICT based library services

| ICT Services | P.G. students | | Faculty Members | |
|--------------------------|---------------|-----------|-----------------|-----------|
| | Response | Deviation | Response | Deviation |
| Digital Library | 36 (43.38) | -21 | 43 (34.4) | -39 |
| Institutional Repository | 29 (34.94) | -28 | 35 (28) | -47 |
| Online Database | 81 (97.6) | 24 | 121 (96.8) | 39 |
| Open access e-resources | 55 (66.27) | -2 | 88 (70.4) | 6 |
| OPAC | 61 (73.5) | 4 | 66 (52.8) | -16 |
| Social Networking | 77 (92.78) | 20 | 108 (86.4) | 26 |
| Blogs/Wikis | 60 (72.29) | 3 | 113 (90.4) | 31 |

Note: Figures in parenthesis denote percentage.

For P.G. students

$$\bar{X}_1 = 57$$

$$\sigma_1 = 17.85$$

For Faculty Member

$$\bar{X}_2 = 81.86$$

$$\sigma_2 = 32.03$$

The analysis of data of Table-3 depicted that the P.G. students used mostly online databases subscribed by the library having a response rate of 97.6%. It is followed by use of other databases such as social networking (92.78%), OPAC (73.5%), blogs/wiki (72.29%), open access e-resources (66.27%), digital library (43.38%) and Institutional repository (34.94%). Similarly subscribed online databases were mostly used by

the faculty members as opined by them with a response rate of 96.8%. The other ICT based services as opined by them in decreasing order were blogs/wiki(90.4%), social networking (86.4%), open access e-resources(70.4%), OPAC(52.8%), digital library(34.4%), institutional repository (28%).

Table-4: Frequency of use of ICT products and services

| Respondents | Almost daily | Once in a week | Twice in a week | Thrice in a week | Total |
|-----------------|-------------------|-----------------|-----------------|------------------|------------------|
| P.G. Students | 76 (91.57) | -- | 2 (2.41) | 5 (6.02) | 83 (100) |
| Faculty members | 111(88.8) | 2(1.6) | 5 (4) | 7 (5.6) | 125 (100) |
| Total | 187 (89.9) | 2 (0.96) | 7 (3.37) | 12 (5.77) | 208 (100) |

Note: Figures in parenthesis denote percentage.

Regarding frequency of use of ICT based library services, the analysis of data of Table-4 showed that out of 208 respondents, 187(89.9%) used on daily basis. It was followed by thrice in a week(5.77%), twice in a week(3.37%) and once in a week(0.96%). Further the study indicated that more percentage of faculty members(91.57%) uses ICT services on daily basis in comparison to P.G. Students (88.8%)

Table-5: Place to use ICT service

| Place of use | P.G. Students | | Faculty Members | |
|--------------------|---------------|-----------|-----------------|-----------|
| | Response | Deviation | Response | Deviation |
| Central library | 74 (89.16) | 15.8 | 80 (64) | 9 |
| Computer lab/dept. | 66 (79.52) | 7.8 | 117 (93.6) | 46 |
| Cyber cafe | 53 (63.86) | -5.2 | 14 (11.2) | -57 |
| Home/ hostel | 59 (71.09) | 0.8 | 91 (72.8) | 20 |
| Other place | 39 (46.99) | -19.2 | 53 (42.4) | -18 |

Note: Figures in parenthesis denote percentage.

For P.G. students

$$\bar{X}_1 = 58.2$$

$$\sigma_1 = 11.89$$

For Faculty Member

$$\bar{X}_2 = 85.6$$

$$\sigma_2 = 35.13$$

Central library is the main place to use ICT based library services by the P.G.students as revealed by the analysis of data of Table-5 .It was followed by other places as computer laboratory(79.52%),home/hostel(71.09%),cyber cafe(63.86%) and other places(46.99%).Further the analysis showed that computer laboratory/department is the main place to use ICT services by the faculty members(93.6%),followed by other places such as home(72.8%),central library(64%),,other place(42.4%) and cyber café(11.2%).

Purpose of using ICT services

The purchase of using ICT services differs from person to person so also among faculty members and students. Realizing this, attempts were made to collect data on this and had been tabulated as follows.

Table-6: Purpose of using ICT services

| Purpose of use ICT services | P.G. Students | | Faculty members | |
|--------------------------------|---------------|-----------|-----------------|-----------|
| | Response | Deviation | Response | Deviation |
| E- mail | 83 (100) | 18.16 | 125 (100) | 34.66 |
| Study | 77 (92.78) | 12.16 | 100 (80) | 9.66 |
| Research/ publication | 71 (85.55) | 6.16 | 123 (98.4) | 32.66 |
| Self improvement | 61 (73.5) | -3.84 | 80 (64) | -10.34 |
| Entertainment | 44 (53.02) | -20.84 | 51 (40.8) | -39.34 |
| Other purposes | 53 (63.86) | -11.84 | 63 (50.4) | -27.34 |

Note: Figures in parenthesis denote percentage.

For P.G. students

$$\bar{X}_1 = 64.84$$

$$\sigma_1 = 13.57$$

For Faculty Member

$$\bar{X}_2 = 90.34$$

$$\sigma_2 = 28.18$$

The analysis of data of Table-6 showed that all P.G. Students uses ICT services for e-mail (100%).It is followed by other purposes such as study (92.78%).research/publication (85.55%),self improvement(73.5%),other purchases (63.86%) and entertainment(53.02%).The prime purpose of using ICT services by faculty members is e-mail(100%) as per the data of Table-5.The other purposes of using the services in decreasing order are research/publication(98.4%),study(80%),self improvement (64%)other purposes(50.4%) and entertainment(40.8%).

Method to use ICTs product and services

There are various ways to learn about the use of ICT services and various methods to use these services. The present study attempted to collect data on this and data were tabulated as follows.

Table-7: Ways of learning the use of ICT services

| Ways to learned | P.G. Students | | Faculty members | |
|-------------------------------------|---------------|---------------|-----------------|---------------|
| | Response | Deviatio n | Response | Deviatio n |
| Trial and error | 55 (66.27) | -7.6 | 112 (89.6) | 25 |
| Guidance from library staff | 60 (72.29) | -2.6 | 63 (50.4) | -24 |
| Guidance from friend/ colleagues | 68 (81.93) | 5.4 | 109 (87.2) | 22 |
| Formal education/ training | 81 (97.6) | 18.4 | 102 (81.6) | 15 |
| Other ways | 49 (59.04) | -13.6 | 49 (39.2) | -38 |

Note: Figures in parenthesis denote percentage.

For P.G. students

$$\bar{X}_1 = 62.6$$

$$\sigma_1 = 11.12$$

For Faculty Member

$$\bar{X}_2 = 87$$

$$\sigma_2 = 25.9$$

Formal education and training is the main way to learn about the use of ICT based services with a response rate of 97.6% as revealed from the analysis of data of Table-7. The other ways by as opined by the P.G. Students were guidance from friends (81.93%), guidance from library staff (72.29%), trial & error (66.27%) and other ways (59.04%). The data also revealed that trial & error was the prime way of learning to use ICT services by the faculty members (89.6%), followed by other ways such as guidance from friends/colleagues, formal education & training, guidance from library staff and other ways with a response rate of 87.2%, 81.6%, 50.4% and 39.2% respectively.

Table-8: Medium of searching the ICT based services

| Medium of searching | P.G. Students | | Faculty Members | |
|---------------------|---------------|-----------|-----------------|-----------|
| | Response | Deviation | Response | Deviation |
| Search engine | 78 (93.97) | 25 | 118 (94.4) | 31 |
| Web sites | 43 (51.82) | -10 | 90 (72) | 3 |
| Library portals | 33 (39.76) | -20 | 79 (63.2) | -8 |
| Other sources | 58 (69.88) | 5 | 61 (48.8) | -26 |

Note: Figures in parenthesis denote percentage.

For P.G. students

$$\bar{X}_1 = 53$$

$$\sigma_1 = 16.96$$

For Faculty Member

$$\bar{X}_2 = 87$$

$$\sigma_2 = 20.68$$

Data collected on medium of searching ICT services were tabulated in Table- 8 and the analysis indicated that for both respondents i.e. faculty members and P.G. Students search engine was the main medium to search ICT based library services with a response rate of 94.4% and 93.97 % respectively.

The other medium adopted by the P.G.students to search ICT services were other sources(69.88%),websites(51.82%) and library portals(39.76%) .For faculty members,the other mediums were wesites(72%),library portals(63.2%) and other sources(48.8%).

The study further attempted to know which search engine the responedents preferred most and data collected on this were tabulated in Table-.

Table-9:Preferred search engine

| Preferred search engine | P.G. Students | | Faculty members | |
|-------------------------|---------------|-----------|-----------------|-----------|
| | Response | Deviation | Response | Deviation |
| Google | 83 (100) | 15.5 | 125 (100) | 21.33 |
| Yahoo | 77 (92.78) | 9.5 | 119 (95.2) | 15.33 |
| MSN | 71 (85.55) | 3.5 | 108 (86.4) | 4.33 |
| Alta Vista | 62 (74.7) | -5.5 | 98 (78.4) | -5.67 |
| Excite | 59 (71.09) | -8.5 | 93 (74.4) | -10.67 |
| Hot Boot | 53 (63.86) | -14.5 | 79 (63.2) | -24.67 |

Note: Figures in parenthesis denote percentage.

For P.G. students

$$\bar{X}_1 = 67.5$$

$$\sigma_1 = 10.46$$

For Faculty Member

$$\bar{X}_2 = 103.67$$

$$\sigma_2 = 15.62$$

Among various search engines used by the respondents, Google was the main search engine used by the faculty members and P.G.students as revealed by the analysis of data of Table-9 with a response rate of 100% each. The other search engines followed by both categories of respondents were yahoo, MSN. AltaVista, Excite and Hot Boot.

Impact of ICT product & services on study and research

The study attempted to know the impact of ICT based library services on study and research of the respondents and the data collected on this were tabulated in Table-10.It depicted that most of the respondents opined the impact

as good(48.08%),followed by other opinions such as excellent(35.1%),average(7.21%),poor(7.21%) .Some respondents did not want to give any opinion on this(2.41%).

Table-10: impact of ICT product & services on study and research

| Impact of ICT | Excellent | Good | Average | Poor | Cannot say | Total |
|-----------------|------------------|--------------------|------------------|------------------|-----------------|------------------|
| P.G. Students | 37 (44.58) | 31 (37.35) | 8 (9.64) | 2 (2.41) | 5 (6.02) | 83 (100) |
| Faculty members | 36 (28.8) | 69 (55.2) | 7 (5.6) | 13 (10.4) | -- | 125 (100) |
| Total | 73 (35.1) | 100 (48.08) | 15 (7.21) | 15 (7.21) | 5 (2.41) | 208 (100) |

Problems in using ICT based services

There are a lot of problems in using in ICT based library services. Realizing this, data were collected on this to find out the various problems faced by the respondents and had been tabulated in Table-11.

Table-11:Problems in using ICT services

| Problems | P.G. Students | | Faculty members | |
|--------------------------|---------------|-----------|-----------------|-----------|
| | Response | Deviation | Response | Deviation |
| High cost | 77 (92.78) | 0.16 | 121 (96.8) | 2.5 |
| Reliability | 74 (89.16) | -2.84 | 119 (95.2) | 0.5 |
| Dependent on electricity | 81 (97.6) | 4.16 | 123 (98.4) | 4.5 |
| Physical strain | 79 (95.19) | 2.16 | 125 (100) | 6.5 |
| Mental strain | 82 (98.8) | 5.16 | 125 (100) | 6.5 |
| Others | 68 (81.93) | -8.84 | 98 (78.4) | -20.5 |

Note: Figures in parenthesis denote percentage.

For P.G. students

$$\bar{X}_1 = 76.84$$

$$\sigma_1 = 4.75$$

For Faculty Member

$$\bar{X}_2 = 118.5$$

$$\sigma_2 = 9.42$$

The analysis of data of Table- revealed that mental strain was the main problem faced by the P.G.students(98.8%),followed by other problems such as dependent on electricity(97.6%),physical strain(95.19%),reliability(89.16%),high cost(92.78%) and others(81.93%).Similarly the faculty members opined that physical strain and mental strain were the main problem to use ICT services ,followed by dependent on electricity, high cost, reliability and others with a response rate of 98.4%,96.8%,95.2% and 78.4% respectively.

8. MAJOR FINDINGS OF THE STUDY

On the basis of analysis and interpretation of collected data of respondents, it is clear that most of the faculty members and P.G.students of CVRCE, Bhubaneswar possess excellent knowledge on ICT based services as per their own assessment. They also use various ICT based services on daily basis which is a good sign for teaching and learning environment. Regarding use of various ICT based services, the opinion of faculty members and P.G.students differs considerably which seems to be natural. Although the main place of using ICT services by faculty members is their department, their second place of preference is Central Library, which may be due to their tight work schedule. It is quite interesting to note that the prime purpose of using ICT service is e-mail for both categories of respondents. Besides this , the second main purpose behind use of ICT services by students is study where as for faculty members is research and publication. The P.G.students have learn to use ICT based services through formal education and training where as the faculty members have learnt this service mostly through trial and error .This result also justifies that earlier result the students possess more knowledge on ICT than faculty members .The main medium to use ICT services for both categories of respondents is search engine and google is the most preferred search engine for them. Regarding impact of ICT services on study and research, the

respondents opined it as good. Dependent on electricity is the main problems faced by the respondents.

9. SUGGESTIONS AND CONCLUSION

On the basis of present study ,it can be assessed that the use of ICT based services by the faculty members and students is almost satisfactory. However the central library needs to take some more steps to maximize the use of ICT based library services such regular organization of orientation programs on use of automated library system, online databases, digital library, institutional repository etc. Also steps need to be taken by the Central library to make library websites more user friendly with links to various ICT based library resources and services, creation of digital library, institutional repository, library blogs etc. The central library also needs to take initiative to involve users in developing new ICT based library services. Continuous electricity supplies also need to be ensured by the library.

In the age of ICT, the importance of ICT based library services cannot be ignored, hence cannot be delayed. The users also need to make themselves aware of these services to avail maximum benefits of these services. At the same time the library and information science professionals need to develop and popularize various ICT based library services in a positive mind to cater information needs of users. The present study on CVRCE, Bhubaneswar may be a sample study for other engineering college libraries of Odisha in particular and India in general. This will lead to overall development of library system and services, which in turn improve the educational system of engineering colleges.

REFERENCES

1. Al-Ansari,H. 2011. "Application of information and communication technologies in special libraries in Kuwait". *The Electronic Library* 29(4): 457-469.
2. Anie,S.O. and Achugbue,E.I.2009. "Library information and communication technology in Nigerian universities". *Library Hi Tech News* 26 (7):.8 -10.
3. Dilevko, J. and Harris, R.M.1997. "Information technology and social relations". *J. Ameri. Soc. Inform. Sci.* 48(8):718-27.

4. Haneefa,M.2007. "Application of information and communication technologies in special libraries in Kerala (India)". *Library Review* 56 (7):.603 – 620.
5. Haneefa,M.K. and Abdul Shukkoor,C.K.2010. "Information and Communication Technology Literacy among Library Professionals in Calicut University, Kerala". *DESIDOC Journal of Library & Information Technology* 30(6):55-63.
6. Sampath Kumar, B.T and Biradar,B.S.2010. "Use of ICT in college libraries in Karnataka, India: a survey". *Program: electronic library and information systems* 44(3):271-282.