

## USE OF E-RESOURCES FOR TEACHING AND RESEARCH BY THE FACULTY MEMBERS OF VARIOUS ENGINEERING COLLEGES OF VTU, KARNATAKA: A STUDY

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### ABSTRACT

*The study presents the use of e-Resources by the faculty members and research scholars various engineering colleges of Visvesvaraya Technological University (VTU) Belgaum, Karnataka. The main aim of this study is to know the usage of e-Resources by faculty members and research scholars who have registered through the recognized Research Centers of Visvesvaraya Technological University (VTU), Belgaum, Karnataka. As a tool the survey method of questionnaire was distributed among the respondents of various departments. Out of 1000 questionnaires, 866 questionnaires were received from the respondents and 86.6% of respondents have replied to the quires. It is observed that majority of senior level teachers and research scholars access the e-Resources for the research work rather than teaching. The study revealed that, 94% of the users are depending on e-Resources which are more relevant for their study rather than print resources. The trend predicts that e-Resources has over taken the print resources and predicts that the print resources will be phased out in near future.*

**Keywords:** Use of e-Resources, engineering college faculty, research scholars, Bangalore region.

### INTRODUCTION

The new technological developments taking place in the field of Information and Communication Technology (ICT) has widen the way for new concepts that is Library without walls. Today we are living in a place where the technology has dominated and it could be possible for libraries to adopt such changes. Libraries have incorporated all the new techniques that are suitable and useful for them by improving their quality services meaningful to its users. In recent years the Internet and Web has become more popular and necessary tool for every individual due to its affordable cost with maximum benefits. This trend has changed the Libraries

to go ahead to avail the benefit in building their collections and providing quality services to its academic community. The Libraries are the centre of attraction in the campus to provide e-Resources to its users to keep abreast on the latest development in their field. The electronic media has created several opportunities in providing quicker access to the information at global level. The e-Resources are now available to the users on the tip of a finger and there are no barriers to access. The marvelous technology trend has made it easy to store wide range of e-resource products in various forms like e-books, e-journals, e-databases, e-reports, e-maps, e-pictures e-theses e-newspapers CD-ROMs/DVDs, Internet, and websites, etc. The access to e-Resources not restricts to library alone and has been extended via sophisticated personal computers, handheld palm tops and laptops.

### **OBJECTIVES OF THE STUDY**

1. To identify the information needs of engineering faculty
2. To find out the faculty frequency to access e-Resources
3. To know the importance of e-Resources for academic and research
4. To assess the e-Resources usage and various sources of access
5. To know the problems faced by the teachers while accessing the e-resources
6. To ascertain the methods followed to keep abreast of current developments in their field

### **VISVESVARAYA TECHNOLOGICAL UNIVERSITY (VTU): A BRIEF INTRODUCTION**

The Visvesvaraya Technological University, Karnataka, has been established on April 1, 1998 by an act called Visvesvaraya Technological University (VTU) Act 1994 for the purpose of imparting quality technical education and to promote research in the field of Engineering, Technology and Allied Sciences in the state of Karnataka. As per provision, Visvesvaraya Technological University (VTU) can affiliate only Engineering colleges that are offering Bachelor of Engineering Courses. The institutions who wish to offer Post Graduate programs like Master of Technology/Master of Business Administration/Master of Computer Application programs have to start with Bachelor of Engineering (B.E) programs. Visvesvaraya Technological University (VTU) is one of the biggest Technological Universities in India, having 204 colleges affiliated to it with undergraduate courses with 28 disciplines and Post Graduate Programs in 71 disciplines. The intake at Undergraduate level is about 67,100 students and at the Postgraduate level it is about 12,666 students. There are 2305 departments recognized as research centers in addition to Master of Business Administration (MBA) program. The jurisdiction of Visvesvaraya Technology University is spread over the Karnataka State having four regional centers at Bangalore, Belgaum, Gulbarga and Mysore. Over 98 engineering colleges exist in Bangalore region which is considered as silicon city of India.

### **SCOPE AND LIMITATIONS OF THE STUDY**

The present study emphasizes on the use of e-Resources for teaching and research by the faculty members and research scholars of various engineering colleges of Bangalore region. Hence, it was felt appropriate to take up a study on the importance of e-Resources for teachers and scholars of various engineering colleges, particularly Bangalore region which is famous for premier higher educational technical institutions like Indian Institute of Science, Indian Institute of Management and various engineering colleges. More over Bangalore is also considered as a hub of software industry.

## REVIEW OF LITERATURE

A study on Library Resources and Services of Engineering colleges in Karnataka by **Kannapanavar, B. U., & Manjunatha, K. V. (2011)**<sup>1</sup> highlighted that, in the era of information technology, computers and communication infrastructure are prerequisites. Hence, libraries are to provide more fund and trained manpower to maintain and extend better service to the engineering college library users. Owing to the tremendous expansion of knowledge and its dissemination through great variety of media, the organization of information services in engineering college libraries requires new technology and methods for the benefit of the users. Information has been recognized as vital resource, its need in decision-making, extension of knowledge, and conservation of research efforts is indispensable. The survey result on Browsing of E-journals by Engineering Faculty by **Denise Beaubien Bennett & Amy G. Buhler (2010)**<sup>2</sup> explores that, Engineering faculty still use Table of Contents (ToC) and journals browsing to support current awareness and other information-seeking needs. Engineering faculty still pay attention to journals name and patterns of use among engineering departments are apparent. The results show some distinct patterns across the academic ranks of Assistant Professors, Associate Professors, and Professors. The respondent's age correlate with their activities, but settled instead for an assumption of general correlation of age, experience or habit, and academic rank. Perhaps rank is as strong an indicator of browsing behavior as age, since the faculty of the same rank is engaged in similar research behavior. Assistant Professor are still finessing their research focus and assessing the place of their research within discipline. Mid-career Associate Professors are the most likely to have highly-focused research interests and to be aware of related work conducted by others. Late careers Professors are more likely to acknowledge the universe of research beyond their core awareness. **Ansari, M. N., & Zuberi, B. A. (2010)**<sup>3</sup> have surveyed on Use of Electronic Resources among Academics at the University of Karachi. The study explores that, electronic resources are the best means of getting current and up-to-date information. Academics use these electronic resources, but due to networking problems and lack of training they not properly used. While a majority of academics are quite satisfied with electronic resources they regard them as less reliable. They consider electronic resources produced by an authentic organization or website to be authentic and reliable. Electronic resources are mostly used for research and lecture preparation. The Use of Scholarly Electronic Journals at the Indian Institute of Science was studied by **Golnessa Galyani Maghaddam & V.G Talwar (2008)**<sup>4</sup>. The result of the study suggests that the library network with the availability of significant numbers of electronic journals at the Indian Institute of Science has been successful. The results suggests that 24 hours free access to electronic resources at the user's desktop leads to increased acceptance and use of scholarly electronic journals. This service need to be maintained and continued in future at Indian Institute of Science, Bangalore. This successful service can be used as model for other institutions in India as well as other developing countries. **Nikham, K & Pramodini, B (2007)**<sup>5</sup> conducted a survey on use of e-journals and databases by the academic community of University of Mysore. The study explores the emergence of internet which has revolutionized the models of accessing and dissemination of information on E-resources, particularly e-journals and databases are important sources of information. The survey further indicates that, the use is marginal and the scientists in the Mysore University campus need constant guidance and training to maximize the use of e-resources. Study of Use of Electronic Resources for implementing Library Consortium by **Sarasvady, S., & Khatari, N. K. (2007)**<sup>6</sup> observed that, in the last ten years there is a phenomenal increase in the electronic collections and the correlation between the availability and awareness is found among teaching and research users, where many participants aware of the electronic

journal collection available in the institution. There is a significant correlation between the reason for consulting the journals and the age of the participants. The young users are inclined for electronic journals particularly for study, research and carriers, whereas older participants use them for both research and teaching. The broader level findings show the greater use of electronic journals among young academic users which would be not only due to their high level of knowledge with new technologies, but also to the fact that they are more active in carrying our research. They concluded that many users will resort to electronic journals if more orientation programme are conducted. If studies are conducted prior to the consortium formation, it may yield fruitful results in application. Role of E-books in Academic Libraries: Towards Virtual Library by **S. Tholkappian & D. Chandran (2007)**<sup>7</sup> investigated that; e-books have become the vital part of human life in 21<sup>st</sup> century. The technological advancement has allowed us to think for storing all the knowledge of human race in digital form. Use of electronic Resources in Scholarly electronic Journals: A Citation analysis by **Herring, S. D. (2002)**<sup>8</sup> exploratory study confirms that online resources are increasingly important to today's scholars and researchers. By examining a sample of articles published in e-journals, we may be looking at researchers who are at the leading edge of use and acceptance of electronic sources. A radical change in information seeking behaviour and information resource use is taking place as scholars and researchers become more comfortable and familiar with the resources available through the Web. An awareness of this change can only help us in preparing for the future. Online resources offer an exciting alternative to, and an expansion of traditional research sources and tool. By understanding how scholars use these resources, librarians and other information professionals will be able to provide enhanced service to their users. **Mulla, K. R., & Chandrashekhara, M. (2006)**<sup>9</sup> opines in their study E-resources and services in engineering college libraries that, the collection and service infrastructure of the libraries in the sample regions are not up to the mark. Engineering college libraries are struggling in building digital collection and disseminating digital information, due to the lack of Information Communication Technology (ICT) infrastructure, manpower, awareness, user demand and training. Further, the study recommends for concrete effort on the part of individual institutions with the support from the Information Library Network (INFLIBNET) would be a better alternative in designing on appropriate collection and service infrastructure. An establishment of Information Communication Technology (ICT) task force for individual institutions composed of Information Technology (IT) experts and department heads would bring fruitful results. The research study described in the Information sharing in academic communities: Types and levels of collaboration in information seeking and use by **Talja, S. (2002)**<sup>10</sup> opined for understanding e-journals and database use patterns, however, the best option seems to be to start from the discipline level and to use a similar comparative approach, as used in this study. In future, both qualitative and quantitative methods can be fruitfully used to develop a fuller understanding of field and sub specially variation in search strategies, and how these are related to domain size, scatter and relevance criteria.

## **METHODOLOGY**

A total of 866 respondents participated in the survey. In order to meet the objectives of the study; data was collected from 88 engineering colleges of Bangalore region under Visvesvaraya Technological University (VTU), Belgaum, Karnataka. The sample was collected from the research scholars and faculty members who are teaching undergraduate courses and post graduate courses who are also undertaking research work as well as teaching. Teachers and scholars working in engineering colleges of Bangalore region that comprising six districts such as Bangalore Rural, Bangalore Urban, Ramanagar, Tumkur, Kolar, and Chikkaballapur were only

considered. A structured questionnaire was considered appropriate to collect the relevant data on Importance of e-Resources for teaching and research for the faculty members of engineering colleges of Visvesvaraya Technological University (VTU) Belgaum, Karnataka. Altogether, 1000 questionnaires were administered personally to the respondents and 866 duly-filled-in questionnaires are received with a response rate of 86.06% and considered for the analysis. Using SPSS20 package, certain statistical results like mean, and standard deviation were obtained and Chi-square tests were conducted on data.

## DATA ANALYSIS AND INTERPRETATION

**Table 1: Designation of respondents**

Designation	No. of Respondents	Percentage
Professor	70	08.00
Associate professor	134	15.50
Assistant professor	496	57.50
Others	166	19.00
<b>Total</b>	<b>866</b>	<b>100.00</b>

Table 1 shows that 496 (57.50%) respondents working as teachers in various engineering colleges under Visvesvaraya Technological University in Karnataka state are Assistant Professors and 134 (15.50%) respondents are Associate Professors, 166 (19%) respondents are working in areas like research and only 70 (08%) are Professors.

**Table 2: Courses the Respondents teaching in their Departments**

Courses Taught	No. of Respondents	Percentage
Undergraduates	584	68.00
Postgraduates	59	07.00
Doctoral Research Supervision	203	23.50
Others	20	02.50
<b>Total</b>	<b>866</b>	<b>100.00</b>

Table 2 clearly indicates that, 584 (68%) respondents who working as teachers in the engineering colleges under Visvesvaraya Technological University, Karnataka are teaching undergraduate courses, 59 (07%) respondents are teaching post graduate courses, 203 (23.50%) respondents are doctoral research supervisors while only 20 (02.50%) respondents are working in other areas.

**Table 3: Frequency of Visits to the Library to access e-Resources**

No. of visits to Library	No. of Respondents	Percentage
Daily	268	31.00
Once a week	217	25.00
Twice a week	146	17.00
Monthly	34	04.00
When need arises	201	23.00
<b>Total</b>	<b>866</b>	<b>100.00</b>

Table 3 indicates that, 268 (31%) respondents who are teachers working in engineering colleges under Visvesvaraya Technological University, Karnataka visit their college library daily to access e-resources. From the survey results it can be inferred that, 217 (25%) teachers visit the library once a week, 146 (17%) teachers visit their library twice a week, 34 (04%) teachers visit their library monthly and 201 (23%) teachers visit their library only when need arises to access e – resources.

**Table 4: Average time spent on weekly basis on use of e-Resources**

Time Spent in the Library	No. of Respondents	Percentage
Up to half an hour	186	21.50
01 - 02 hours	385	44.50
02 - 03 hours	139	16.00
03 - 04 hours	45	05.00
More than 4 hours	111	13.00
<b>Total</b>	<b>866</b>	<b>100.00</b>

From the table, 4 it can be proved that, 186 (21.50%) teachers working in engineering colleges under Visvesvaraya Technological University, Karnataka spent only half an hour in their library to use e-resources. The survey result reveals 385 (44.50%) teachers spend 1 to 2 hours, 139 (16%) teachers spend 2 to 3 hours, 45 (05%) teachers spend 3 to 4 hours and 111 (13%) teachers spend more than 4 hours in using e-resources in their college library.

**Table 5: Methods by which the teachers to keep abreast of current development in their field**

Methods to Keep Abreast	No. of Respondents	Percentage
Referring journals	641	74
Referring abstracts	294	34
Personal communication	412	48
Seminars/workshops /Conferences	549	63
Electronic discussion	159	18
Current awareness Service	132	15

The table 5 depicts that, 641 out of 866 the respondents who are working as teachers in engineering colleges under Visvesvaraya Technological University, Karnataka refer to journals to keep abreast of current developments in their fields. The study shows that, 549 (63%) teachers attend seminars/workshops & conferences, 412 (48%) teachers use personal communication, 294 (34%) teachers refer to abstracts of papers published in journals, 159 (18%) teachers use electronic discussion, and 132 (15%) teachers use current awareness services to keep abreast of current developments in their fields.



**Table 6: Importance of the following in teaching and research**

Importance	Very important	Important	Neutral	Unimportant	N/A	Mean	S.D
Books	741	119	05	00	01	1.15	0.394
Scholarly journals	398	379	84	01	04	1.65	0.695
Internet resources	554	284	26	01	01	1.40	0.566
Personal communication	272	439	133	13	09	1.90	0.784
Chatting	238	190	272	99	67	2.50	1.222
Discussion with students/colleagues	425	355	74	06	06	1.63	0.729

Table 6 indicates that, 741 out of 866 respondents who are working as teachers in engineering colleges under Visvesvaraya Technological University, Karnataka assert that books are very important for teaching and research, 119 feel that they are important while only one teacher feels that books are not important for teaching and research. Scholarly journals are considered very important by 398 teachers, 379 feel that they are important while only 4 feel that they are not important for teaching and research. 554 teachers out of 866 feel that internet resources are very important for teaching and research, 284 feel that they are important while one teacher feels that they are not important for teaching and research. Personal communication with colleague is considered important by 439 teachers, 272 feel it is very important while 9 teachers feel that personal communication with colleague is not important for teaching and research. 428 teachers out of 866 feel that chatting with people is considered important as this can help them in their teaching and research while 166 teachers feel that chatting does not help them in their teaching or research. Discussion with students and colleagues is considered important by 780 teachers as it helps them in their teaching and research.

**Table 7: Whether teachers use online/e-Resources**

Use online / e-resources	No .of Respondents	Percentage
Yes	818	94.00
No	48	06.00
<b>Total</b>	<b>866</b>	<b>100.00</b>

Table 7 reveals that, 818 (94%) of the respondents who are working as teachers in engineering colleges under Visvesvaraya Technological University, Karnataka use online/e-resources. Only 48 (06%) of the teachers and research scholars do not use online/e-resources.

## RESULTS OF THE STUDY

The overall study reveals that, the entry level Assistant Professors and middle level Associate Professors use more e-Resources rather than senior level teachers like Professors. The reason behind the dependency on e-Resources was found that, the majority of them are pursuing their research in addition to teaching. The study reveals that, 94% (818) of the teachers and research scholars of various cadres in Visvesvaraya Technological University (VTU), Belgaum, Karnataka, use e-Resources provided by the libraries. An approximately 74% (641) of the respondents refer to e-journals to keep abreast of current developments in the fields, 34% (294) refer to abstract of papers published in journals, and 48% (412) respondents update through personal communication for current developments in the field. It is also indicated that, the entry level Assistant Professors and middle level Associate Professors use more e-Resources rather than

senior level teachers like Professors. The entry level staff and middle level staff visits the library on daily basis and spends more time in library for enriching their knowledge to remain in the field. Almost an equal number of middle level teachers visit the Library twice a week and spend similar time to access the e-Resources. The senior level faculty member's visits the library rarely as and when need arises and spend less time to access e-Resources. The important sources of information for the above category were internet resources, scholarly journals and books. However, the methods that adopted by all the teachers to keep abreast of current development in the field by refereeing to journals, referring to abstracts, personal communication and also attending the seminars, workshops and conferences.

## CONCLUSION

The survey findings provide a snapshot of the state of usage of e-Resources at various engineering colleges of Bangalore region as of November 2013. Survey results also suggested a number of developments, and electronic information sources to support all user groups. In all these areas, professional Librarians are playing major role in providing the services for the college concerned. These initiatives have resulted in significantly increased usage of Library services. The survey revealed several important aspects of the engineering college libraries status and e-Resources usefulness for teaching and research activities. The main critical aspect of the study shows that books are considered most important for teaching and research in engineering colleges under Visvesvaraya Technological University, Belgaum, Karnataka followed by internet resources 97%, discussion with students and colleagues 90%, scholarly journals 89%, and personal communication with colleagues 82%. Chatting finds the last position when it comes to usefulness of chatting in teaching and research. The second critical aspect shows that, 94% of the teachers and scholars are depending on e-Resources which is one of the thrust area and libraries should focus to provide various publishers e-Books in addition to e-Journals that has been already provided by the libraries, so that, the end users will avail maximum benefit from the e-Resources. The third critical aspect refers to attract more teachers to us the library facilities for longer time rather than spending less time.

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