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AVAILABILITY AND USABILITY OF ELECTRONIC RESOURCES IN THE ACADEMIC LIBRARIES WITH SPECIAL REFERENCE TO ENGINEERING DISCIPLINE: A STUDY

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ABSTRACT

Awareness of facts, information and skills particularly on Information technology for retrieving online resources for academic and research in the present context is the need of the hours. It is highly necessary for the faculty members, research scholars and M. Tech. students' for the academic fraternity. As a result, they are determined towards ICT tools for acquiring the benefits from the availability of electronic resources. It is also easier due to the easy accessibility of the databases for electronic books, journals, theses and dissertations. So for this, the purpose of this paper is to elaborate the requirement of the electronic resources of the aforesaid users' for academic excellence.

KEYWORDS: *ICT, UGC, AICTE, LIS, academic libraries, electronic resources, engineering discipline, e-resources .*

INTRODUCTION :

The information communication technology (ICT) has made the collection process easiest. The users' are also getting benefited and relying more on online resources for their academic development. Availability of huge information on different subjects is a positive aspect for academic excellence. In the same way, it is a hard task to manage the resources in one terminal systematically and also a challenging job. In this regard, e-resources services in the digital library have taken a separate entity in the field of users' satisfaction. It is required for the students, research scholars and the faculty members for their academic growth and well interest areas. It is in other ways, the easy availability of resources saves time of the users. The institutions subscribe online journals and other databases for plenty of resources and growth of the research and development. Many studies have been identified that, academicians prefer online journals and databases than the print counter-parts. It is because of their lack of time, work pressure and remote access facilities.

The knowledge on hardware, software, rich web resources, computer technology and IT tools have become imminent. Keeping importance to the growth of the faculty members, research scholars and the M. Tech. students', this survey attempts to explore the current status of information

technology literacy of them. In the same way, it is also want to highlight to examine different aspects of them for developing their knowledge and competencies in different domains like, ICT, day to day teaching and learning, research and development. It is hoped that, the present study will not only help the said users' to fine tune their existing knowledge and skills, it will also increase their ability in retrieving resources from the different sources for strengthening their respective fields to redesign in the days ahead.

LITERATURE REVIEW

The necessities of literature review are most important taking to the importance of the data analysis. So for this, collection of literatures before going to study any topic is an unavoidable and essential part. Many social scientists have contributed their valuable suggestions for the development of research. Some of the collections are given below for gaining the primary ideas on the present topic.

Majid & Tan (2002)9 investigated on the information seeking behaviour of the undergraduate computer engineering students on types of information sources available in the library comparing hard copy materials. They found that, undergraduate students are less concentrated on electronic resources than the print resources. So for this, it is important to give stress on online resources for better accomplishment. In the same way, Zhang and et al. (2004)13 studied that, the use of different databases for downloading, printing and e-mailing the articles, they are aware about the copyright and know the plagiarism in their learning processes. Chu & Law (2005)3 said that, most of the students are not familiar about the use of different databases for getting their required things. So it is important to know the primary knowledge on search methodology for retrieving the articles and other documents from the treasure databases. Bhatt & Rana (2011)2 stated that, most of the engineering students and faculty members of the state of Rajasthan were using the databases and sharing their documents through their e-groups and virtual conferences. By this way, the teaching quality of the faculty members developed. Sinh and Nhung (2012)12 commented on the use of databases that, users use the databases for their research and study for updating their professional knowledge. They focus more on journal articles, theses and dissertations than e-books. But, users are less techno-savvy in searching the databases for getting their resources and depend on library professionals. Johnson & Simonsen (2015)8 stated that, Google scholar is the best platform in getting the scholarly articles. It is mostly accepted by the faculty members, students of the engineering disciplines. So, it is clear that, databases are most important in the field of telecommunication, academic institutions, banking and the railway institutions for their operation and management (https://lagunita.stanford.edu/)7. Database systems provide useful information to make the system reliable, efficient, scalability and high level knowledge.

In the above discussion, it is observed that, literature collection is the strength of the scholar for taking good decisions during analysis and interpretations of the data of the chosen topic.

PURPOSE OF THE STUDY

The main purpose of this study is to utilize the Engineering databases exploring digital information for day to day teaching learning processes and to satisfy the needs of the engineering users like, students, research scholars and the faculty members. The availability of information in electronic form is not withering away the physical resources but enhances the educational system and the learning practices. This is in real, it is essential for the quality learning and research development. It is essential in the same way to support the investigator to study the fields like engineering widely in the present context. So to say, the use of engineering databases in the academics is an unavoidable and essential. The importance also has been emphasized by the institutional regulating bodies like, AICTE, UGC and other regulatory bodies that, it is mandatory to procure the journals, databases etc. for supporting the programmes of the institution and establish a good digital library.

AIMS AND OBJECTIVES OF THE STUDY

The basic aim of this study is to provide a new approach to the engineering disciplines utilising online resources for the academic users' in the Engineering Colleges/institutions and technical universities. Further, this study also aims to unfold the difference between hard copy resources in comparison to the electronic

resources used by the different engineering institutions over Bhubaneswar in Odisha. The study in the present context is not an exception but aims to achieve the objectives in the following ways.

•To use and access the electronic resources by the students, research scholars and the faculty members in the Engineering institutions;

•To examine the mind-set of the aforesaid users' in the Engineering Colleges towards the use of e-resources for their teaching-learning betterment;

• To discover the reasons behind the usage of electronic resources comparing to the traditional pattern of print resources;

• To categorize and analyze the exact factors that help in promoting or hindering in the use of electronic resources;

• To advise the required measures for improving the existing library systems and services promoting the use of e-resources for the users' in the engineering institutions; and

• To identify the various problems encountered by the libraries in maintaining a sustainable collection of electronic resources for the benefit of the users' in the engineering institutions.

SCOPE AND LIMITATIONS OF THE STUDY

The upshot of this study has wide scope and coverage taking to the use of electronic resources in the engineering institutions. The impact of the technologies is focused in the day to day human life. In this regard, the sample study will be limited only to the Engineering Databases Like, IEEE, Science Direct, ASCE, ASME, Proquest and e-brary of the Engineering institutions and technical universities to complete the study in due course of time.

Research Methodology and Statistical Techniques Used in the Study

The instrument used for collecting data through a structured questionnaire for the different faculty members, research scholars and the M. Tech. students' of different engineering institutions over Bhubaneswar of Odisha. The scholar personally visited the institutions to generalize the subject taken into account and make the matter more observable. The general Statistical techniques are used in the present investigation for making the analysis statistically viable, interesting and meaningful. As the questions are asked in the form of yes, No, simple statistical equations and to some extent the observations in the form of suggestions, the use of excel spread sheet for deriving the data is taken into consideration for knowing the hypotheses true or false.

Hypothesis

A research hypothesis is an essential factor for a researcher which provides working guidelines to carry out the research work systematic and productive manner. It is a tentative statement of the problem of the accepted truth which could be proved at the end of the study. For the purpose of the present investigation, the following hypotheses have been formulated to ensure a scientific and systematic progress of this investigation.

1. As the students, research scholars and the faculty members in the engineering disciplines are conscious, they must have been aware about the electronic resources;

2. Present day engineering technology is basing upon the computer technologies and the use of different databases like, IEEE, Science Direct, ASCE, ASME, Proquest etc. must predominant on these e-resources of said databases;

3. Infrastructural facilities and the state of the art of the engineering institutions must be available to enable the students, research scholars and the faculty members to different electronic resources and services; and

4. Majority of the students, research scholars and the faculty members must have been used to store or use laptops or desktops for accessing electronic resources for their day to day lesson plans or in the teaching learning processes.

ANALYSIS & INTERPRETATION

The term 'analysis' in social Science research refers to the process of evaluating data using analytical

and logical reasoning to examine each component of the data provided. According to the Pannerselvam, (2004)11, after the collection of data, proper tools and techniques are to be used for classification and analysis. So for this, data analysis is a body of methods that helps to describe the facts, develop explanations and test hypotheses for all sciences. So, data analysis is a way of looking at data to determine, trends, identify outlines and influential observations, and to quickly summarize the data sets (Aczel, 2006, p.51)1. The first and foremost work of the data analysis was to classify the data under individual facets. And then, the data were tabulated and entered in the MS Excel Spread sheet for proper analysis and interpretation. The result of the analysis is shown in the following tables and graphs and the data has been interpreted establishing good relationships among the data sets and to inch the result of the other research, theories and hypotheses.

RATE OF RESPONSE

A total of 90 questionnaires were distributed among the faculty members, Research Scholars and Master of Technology Students' in different engineering institutions over Bhubaneswar of Odisha. Out of which, 80 filled in questionnaires that constitutes a response rate of 88.88 % were received. The category wise distribution of sample respondents is presented in the table-1.1.

Table-1.1: Designation Wise Distribution of Sample Respondents

Categories	*Questionnaires Distributed*	*Questionnaires Received*	*% of Response*	*% of Sample Representation*
Faculty Members	30	27	90.00	33.75
Research Scholars	30	25	83.33	31.25
M. Tech. Students	30	28	93.33	35.00
Total	**90**	**80**	**88.88**	**100.00**

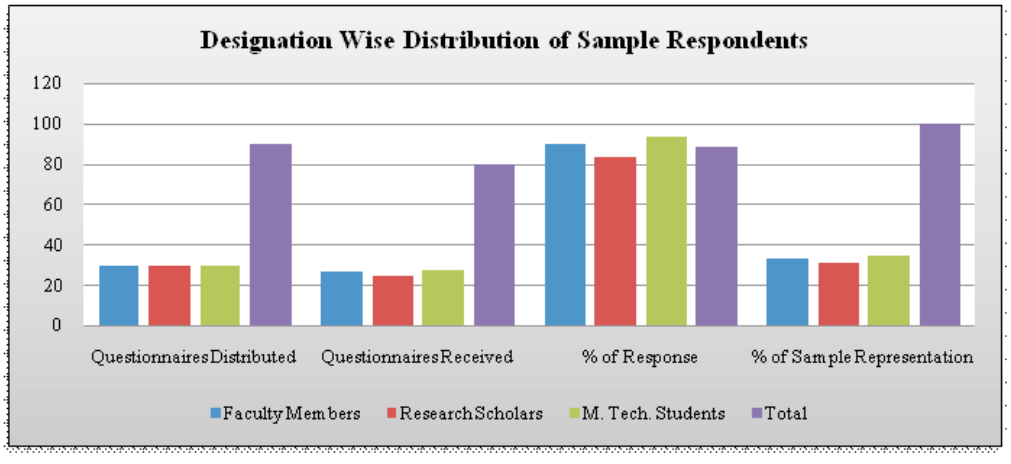

Fig-1.1: Designation wise Distribution of Sample Respondents

The above table & fig.-1.1 reveals that, highest rate of response hailed from M. Tech. Students 28 (93.33%) followed by research scholars 25 (83.33%) and Faculty members 27(90.00%). However the rate of response of the research scholars was a bit less may be because of their less understanding and importance of the purpose of questionnaire or some other personal causes.

Age Wise Distribution of Respondents

It is important to analyze the demography of the samples according to the age of the respondents. Hence, the age wise distribution of sample respondents is depicted in the table-1.2.

Table-1.2: Age Wise Distribution of Respondents

Age Group	*Faculty Members*		*Research Scholars*		*M. Tech. Students*	
	n	*%*	*n*	*%*	*n*	*%*
20-30	5	18.52	13	52.00	26	92.86
31-40	15	55.56	10	40.00	2	7.14
41- 50	4	14.81	1	4.00	0	0.00
>50	3	11.11	1	4.00	0	0.00
Total	**27**	**100.00**	**25**	**100.00**	**28**	**100.00**

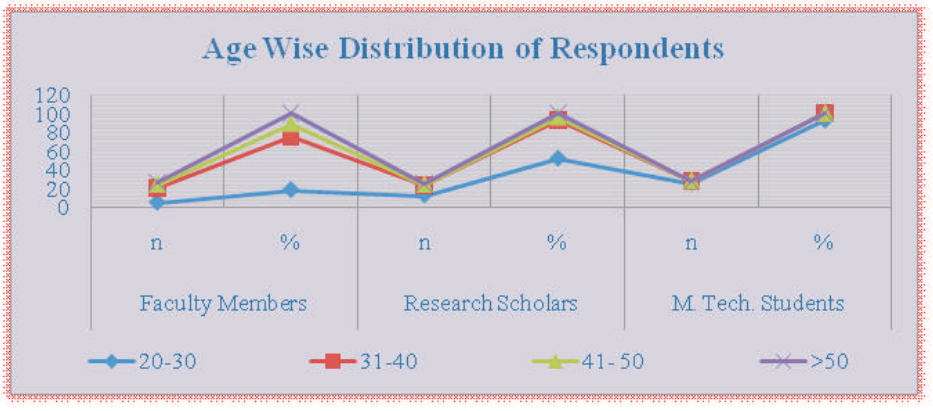

Fig-1.2: Age Wise Distribution of Respondents

The above table-1.2 shows that, Sample respondents of different categories users of different engineering institutions over Bhubaneswar of Odisha. The Faculty members in between the age group of 20-30 is 18.52% followed by research Scholars 52.00% and M. Tech. Students 92.86%. In the same way, respondents in between 31-40 age groups, the Faculty members are 55.56% followed by research Scholars 40.00% and M. Tech. Students 7.14%. Again the users in between the age groups of 41-50 are, Faculty members are 14.81% followed by research Scholars 4.00% and M. Tech. Students 0.00% respectively. But, the respondents >50 age groups are, Faculty members are 11.11% followed by research Scholars 4.00% and M. Tech. Students 0.00% respectively. It is deduced from the above table that, most of the respondents in-between the age groups of 31-40 are faculty members followed by 20-30 age groups are research scholars and M. Tech. Students.

Awareness and the use of e-resources

Electronic resources play an important role for academic excellence. In the same way, use of online resources for class teaching, research and development, preparation of examination are of having paramount importance for engineering institutions. So for this, in respect to the awareness and the use of e-resources in the present scenario, every engineering institution is bound to follow the AICTE and UGC guidelines where the procurement of online resources for academic institutions are necessarily useful for their users as a whole.

Table-1.3: Awareness and the use of e-resources

Knowledge on Resources	*Faculty Members (n=30)*		*Research Scholars (n=30)*		*M. Tech. Students (n=30)*	
	n	*%*	*n*	*%*	*n*	*%*
Online journals	20	66.66%	20	66.66%	25	83.33%
Online databases	18	60.00%	16	53.33%	6	20.00%
e-books	17	56.66%	9	30.00%	5	16.66%
e-theses and dissertations	6	20.00%	19	63.33%	5	16.66%
CD/DVD-ROMs	2	6.66%	1	3.33%	4	13.33%

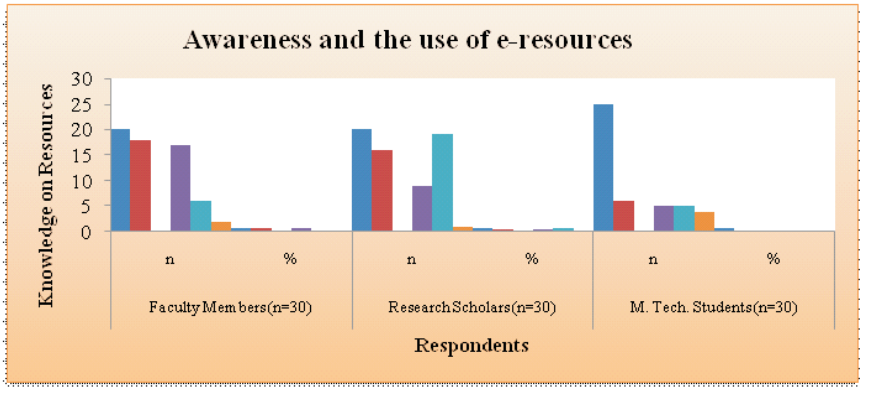

Fig-1.3: Awareness and the use of e-resources

Table-1.3 tells about that, 66.66% faculty members & Research Scholars and 83.33% M. Tech. Students do agree that, they are having online journals access facilities in their institutions. In the same way, 60.00% faculty members; 53.33% research scholars and 20.00% M. Tech. Students agreed that, they are having online databases access facilities in their institutions. In the same way the e-theses and dissertations and e-books and Compact Disc (CD) and Digital Versatile Disc) DVD's are available in their institutions which give great benefits in their day to day learning processes.

USEFULNESS OF THE STUDY MATERIALS

Study materials play an important role for all disciplines; be they under graduate students, post graduate students, research scholars or faculty members. It is generally available both in hard and soft forms catering to handbooks, subject guides, past examination questions, examiners' commentaries, lecture notes and many more. So it is an asset for both the teachers and students to do well in their own domain areas. For that sake, the parameter of 'study materials' have been taken into account for the users of engineering disciplines and the details are enumerated in the following manner.

Table-1.4: Usefulness of Study Materials

Categories of users	*E-Resources (N=90)*				*Books and Journals in Physical Format (N=90)*			
	y	*%*	*n*	*%*	*Y*	*%*	*n*	*%*
Faculty Members	25	83.33	05	16.67	10	33.33	20	66.67
Research Scholars	26	86.67	04	13.33	12	40.00	08	26.67
M. Tech. Students	20	66.67	10	33.33	05	16.67	25	83.33

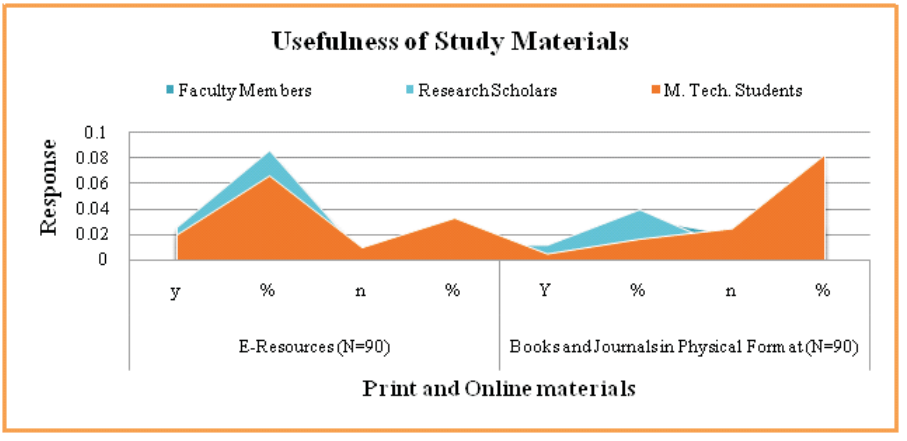

Fig-1.4: Usefulness of Study Materials

Table-1.4 tells that, 83.33% faculty members are using online resources in their day to day class teaching, guiding their scholars and writing articles. In the same way, 33.33% faculty members depend on print materials for their academic usefulness. So, it is clear from the given figures that may be due to the work pressure or time constraint, most of them prefer online resources rather than print materials. Online resources are better accessible through Wi-Fi connectivity and remote login. In the other way, 86.67% research scholars and 66.67% M. Tech. Students rely on online resources and 40.00% research scholars and 16.67% M. Tech. students prefer print materials during their study.

Time spend on e-resources

The good relationship between the Students and the teachers' are most important for better academic productivity. So for this, the study wants to explore the usability of online resources by the users' of the engineering institutions. It matters a lot both for the faculty members (http:/ /nsse.indiana.edu/)4 and the students of the engineering institutions to manage subdividing their precious time using library resources. The following table shows about the time spend on online resources per day for the users' better perspectives.

Table-1.5: Time Spend on e-resources

E-Resources (N=90)						
Time Frequency	Faculty Members		Research Scholars		M. Tech. Students	
	n	%	n	%	n	%
everyday						
1 to 2 hrs	20	66.67	22	73.33	10	33.33
3 to 4 hrs	16	53.33	12	40.00	10	33.33
> 4 hrs	6	20.00	3	10.00	4	13.33
in a week						
1 to 2 hrs	25	83.33	24	80.00	15	50.00
3 to 4 hrs	22	73.33	22	73.33	15	50.00
> 4 hrs	8	26.67	5	16.67	6	20.00
in a month						
1 to 2 hrs	26	86.67	24	80.00	16	53.33
3 to 4 hrs	24	80.00	20	66.67	14	46.67
> 4 hrs	10	33.33	5	16.67	6	20.00

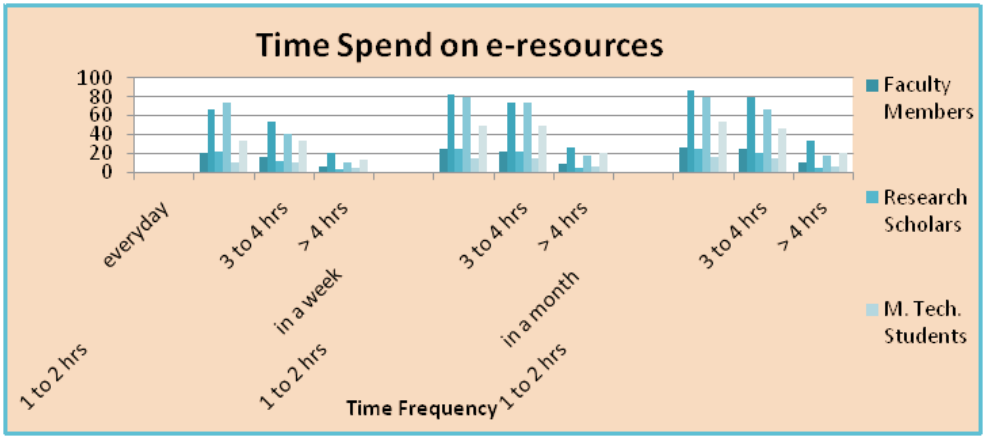

Fig-1.5: Time spend on e-resources

In the above table-1.5, it is estimated that, 66.67% faculty members, 73.33% research scholars and 33.33% M. Tech. students utilise 1 to 2 hours on accessing their online resources every day. Whereas 83.33% faculty members, 80.00% research scholars and 50.00% M. Tech. students utilise 1 to 2 hours in accessing their online resources in a week. In the same way, 86.67% faculty members, 80.00% research scholars and 53.33% M. Tech. students utilise 1-2 hours in a month in accessing online resources. It is clear from the above table that, the faculty members are willing to access more online resources may be because of their work load, article writing, guiding the research scholars and class note preparation. Likewise, the comparative figures are present in the above table taking to the 3 to 4 hours and more than 4 hours in accessing their online resources for better preparation and personal as well as professional excellence.

Use of Web- based e-resources Database

In the present digital era, Library Users' like, faculty members, research scholars and Students are to be more acquainted with the web-based resources, content present in the databases. It will feed them for better teaching and productive research. In this context, it is important to know that, faculty members, research scholars and the M. Tech. students are how far acquainted with the web-based e-resources and different databases. The details of the respondents on the use of online resources are presented in the table-1.6.

Table-1.6: Use of Web- based e-resources Database

Categories of users	*Faculty Members*		*Research Scholars*		*M. Tech. Students*	
	y	*%*	*y*	*%*	*y*	*%*
Science Direct	24	80.00	22	73.33	21	70.00
Proquest	22	73.33	21	70.00	21	70.00
ACM	22	73.33	24	80.00	22	73.33
ASCE	18	60.00	6	20.00	2	6.67
IEL Online (IEEE)	24	80.00	24	80.00	20	66.67
SAGE Research Methods online	13	43.33	12	40.00	8	26.67
Proquest Dissertations and Theses	19	63.33	5	16.67	9	30.00
E-Brary database for e-books	14	46.67	11	36.67	11	36.67
Springer	22	73.33	4	13.33	1	3.33
Elsevier	15	50.00	7	23.33	4	13.33
Any Other	3	10.00	2	6.67	3	10.00

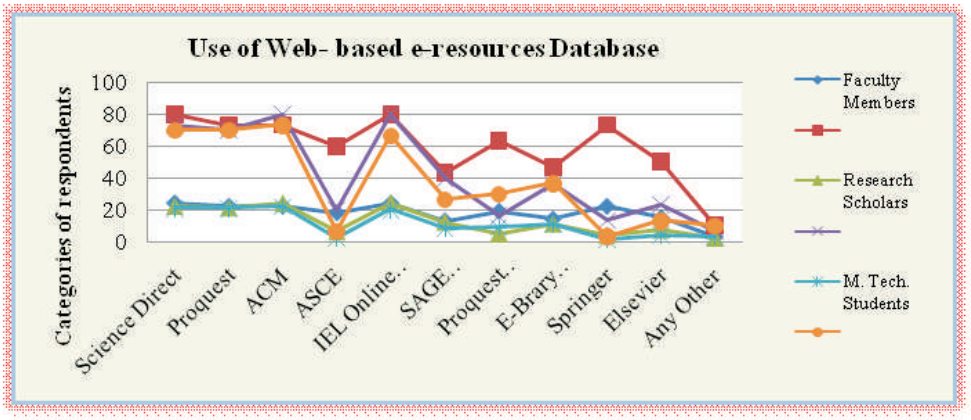

Fig-1.6: Use of Web- based e-resources Database

Table-1.6 reveals that, majority of respondents have more or less access to different online databases in the engineering institutions. It is highly required because of thesis writing, collection of literature, class note preparation, preparation for examination and other cases. 80.00% faculty members and research scholars and 66.67% M. Tech. Students use IEL online databases followed by science direct (80.00%, 73.33% and 70.00%) and Proquest (73.33%, 70.00% and 7.00%). In addition to this, the above table shows that, the use of other databases is also in the best use by the faculty members, research scholars and M. Tech. Students for their day to day activities.

Use of print and online resources

The amount of information both prints and online resources grow in the galloping rate. Each source gives unique benefits (http://www.write.com/)6 in finding information as per the users' needs. Here, faculty members, research scholars and the M. Tech. Students of the engineering institutions want print a well as online resources for their academic requirements. So, to observe the types of resources used for their daily activities are very much essential which is reflected in the following table- 1.7.

Table-1.7: Types of Materials used in Academic Career

Categories of users	*E-Resources (N=90)*				*Books and journals in physical formats(N=90)*			
	y	*%*	*N*	*%*	*y*	*%*	*N*	*%*
Faculty Members	25	83.33	10	33.33	05	16.67	25	83.33
Research Scholars	23	76.67	05	16.67	10	33.33	20	66.67
M. Tech. Students	15	50.00	15	50.00	05	16.67	25	83.33

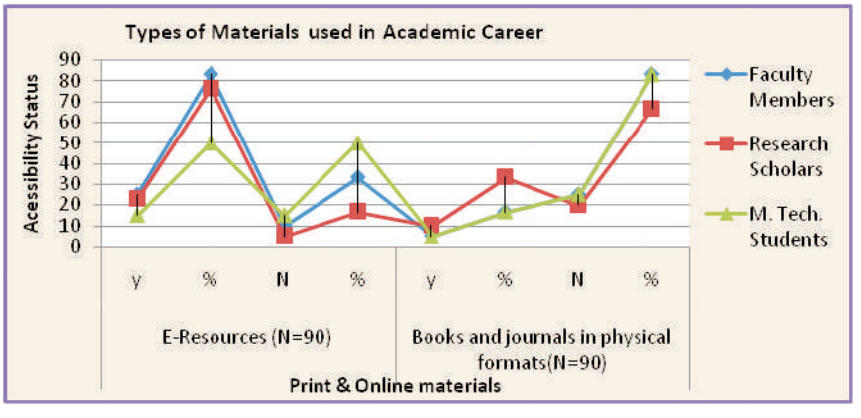

Fig-1.7: Types of Materials used in Academic Career

Table-1.7 reveals that, 83.33% faculty members use electronic resources and 16.67% of them use print materials. It signifies that, rate of accessibility is very less in comparison to the online resources. In the same manner, 76.67% research scholars and 50.00% M. Tech. Students use online resources and 33.33% research scholars and 16.67% M. Tech. Students use books and journals in physical format for their day to day activities.

Learning Pattern of the respondents in Academic Institutions

Mendezabal (2013)10 in his study Survey of Study Habits and Attitudes stated that, favourable study habits and attitude towards the learning gives better result. It impacts significantly on learning pattern, research work and report preparation (http://www.open-science-repository.com/)5 for the term end examination in the academic institutions. So, in this study, use of methodology in acquiring the online resources for better output of the faculty members, research scholars and the M. Tech. Students are of having paramount importance.

Table-1.8: Learning Pattern of e-information

Learning Pattern	*Faculty Members*		*Research Scholars*		*M. Tech. Students*	
	n	*%*	*n*	*%*	*n*	*%*
Independently	25	83.33	20	66.67	22	73.33
Through IT Experts	0	0.00	1	3.33	1	3.33
Help of Library Staff	2	6.67	5	16.67	2	6.67
Take the help of friends	1	3.33	1	3.33	2	6.67
Other ways	0	0.00	0	0.00	0	0.00

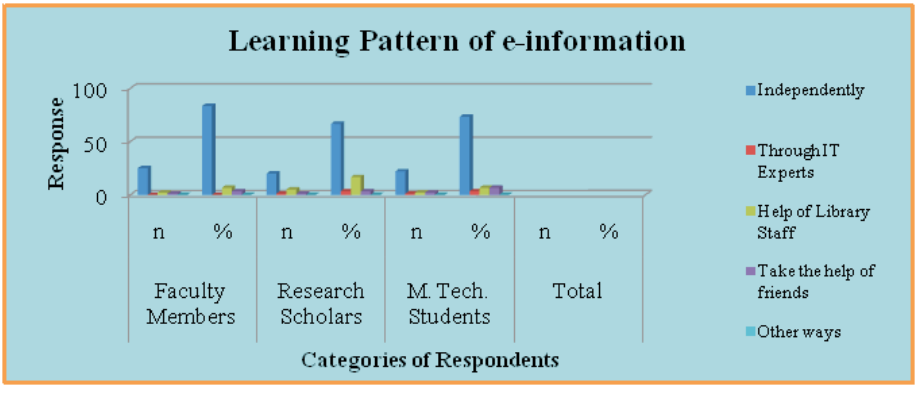

Fig-1.8: Learning Pattern of e-information

Table-1.8 reveals that, faculty members, research scholars and the M. Tech. Students are very much artistic and sound in learning. This is possible, may be due to their anxiety of culture or work pressure. 83.33% of faculty members, 66.67% research scholars and 73.33% M. Tech. Students express their views that, they are capable in handling different engineering databases independently. It shows that, very few users are dependent on the library professionals which signify a good trend among the users in the engineering institutions.

Table-1.9: Timing Facilities for availing the resources

Opening timing	*Faculty Members*		*Research Scholars*		*M. Tech. Students*	
	n	*%*	*n*	*%*	*n*	*%*
9 am to 6 pm	24	80.00	20	66.67	24	80.00
6am to 6 pm	12	40.00	15	50.00	12	40.00
6am to 10 pm	10	33.33	10	33.33	9	30.00
24 hours	8	26.67	2	6.67	4	13.33

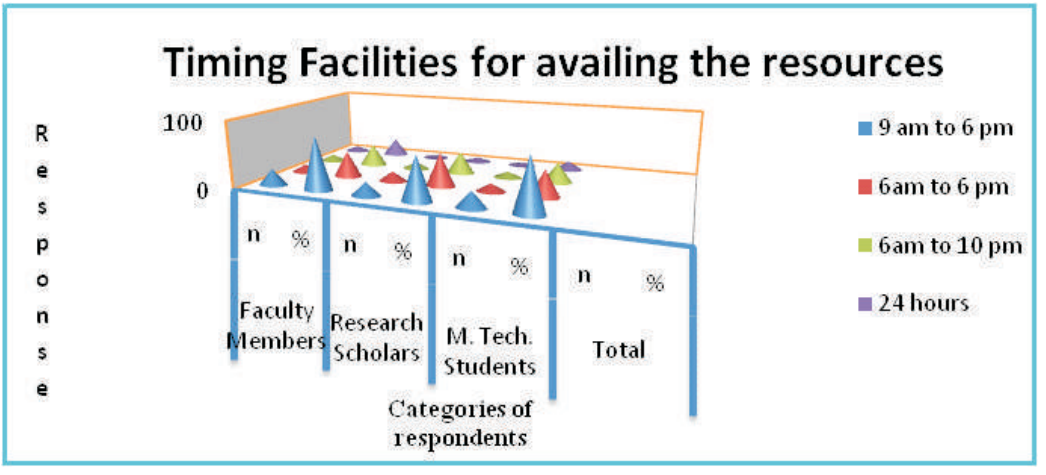

Fig-1.9: Timing Facilities for availing the resources

Table-1.9 states that, 80.00% faculty members and M. Tech Students and 66.67% research scholars are declaring that, they are having library access facilities from 9.00 am to 6.00 pm in the day hours whereas 40.00% faculty members and M. Tech Students and 50.00% research scholars stated that, the opening hours of the library is from 6.00 am to 6.00 pm in a day. In the same way, only 26.67% faculty members, 26.67% research scholars and 13.33% M. Tech. students said that, they are getting round the clock library facilities for accessing their library resources for their better preparation and Scholar supervision. The above statements clear that, the library facilities in the engineering institutions for accessing the library documents and online resources is no doubt a good sign of engineering institutions over Bhubaneswar, Odisha.

Table-1.10: Computer and Printing facilities in the Library

Categories	*Computer Facilities*				*Photocopy Facilities*			
	y	*%*	*N*	*%*	*y*	*%*	*N*	*%*
Faculty Members	27	100.00	0	0.00	27	100.00	0	0.00
Research Scholars	25	100.00	0	0.00	23	76.67	0	0.00
M. Tech. Students	28	100.00	0	0.00	24	80.00	0	0.00

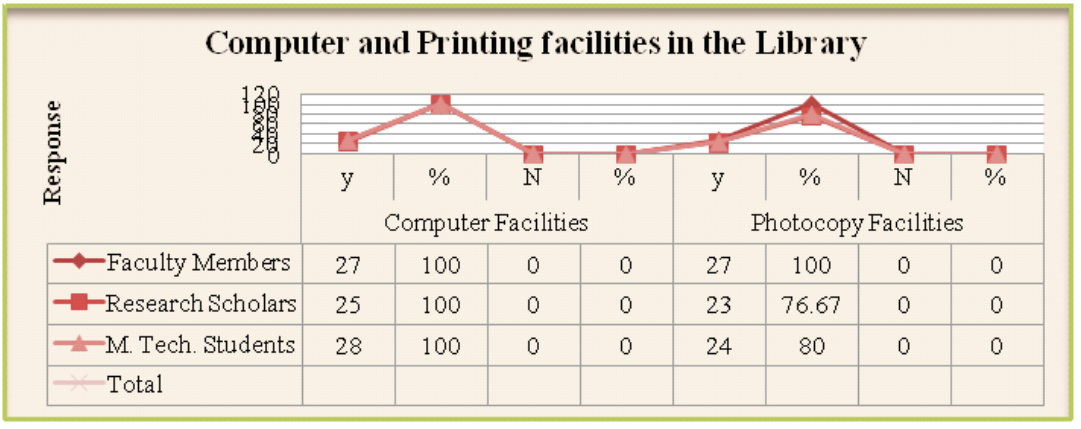

Fig-1.10: Computer and Printing facilities in the Library

Table-1.10 reveals that, 100.00% faculty members, research scholars and M. Tech. students strongly stated that, all of them are having excellent computer and photocopy facilities in their own institutions. This is a healthy sign for printing the documents and taking photocopy of the print materials for their day to day requirements.

Table-1.11: Opinions on e-resources and Infrastructural Facilities

Categories	*Ideal infrastructure and sufficient resources in the Library*							
	e-resources				*Infrastructural Facilities*			
	y	*%*	*N*	*%*	*y*	*%*	*N*	*%*
Faculty Members	27	100.00	0	0.00	25	83.33	0	0.00
Research Scholars	25	100.00	0	0.00	22	73.33	0	0.00
M. Tech. Students	28	100.00	0	0.00	22	73.33	0	0.00

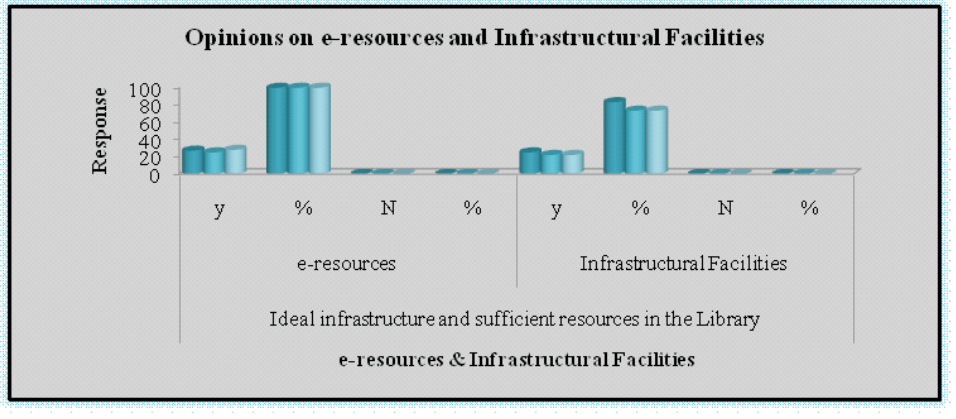

Fig-1.11: Opinions on e-resources and Infrastructural Facilities

Table-1.11 reveals that, 100.00% faculty members, research scholars and M. Tech. students strongly stated that, they are having excellent online resources in their institutions and best infrastructural facilities (faculty members-83.33%, research scholars-73.33% and M. Tech. students-73.33%). E-resources helps the users' in preparing the class notes, making slides for the mart class rooms, guiding the students and making reports for them, dissertations and theses for the students as well as research scholars as a whole.

Table-1.12: Use of Computer and storing devices

Categories	*Use of Computer and storing devices*							
	Use of Laptops or desktops				*Use of Storing Devices*			
	y	*%*	*N*	*%*	*y*	*%*	*N*	*%*
Faculty Members	27	100.00	0	0.00	27	100.00	0	0.00
Research Scholars	25	100.00	0	0.00	25	100.00	0	0.00
M. Tech. Students	28	100.00	0	0.00	28	100.00	0	0.00

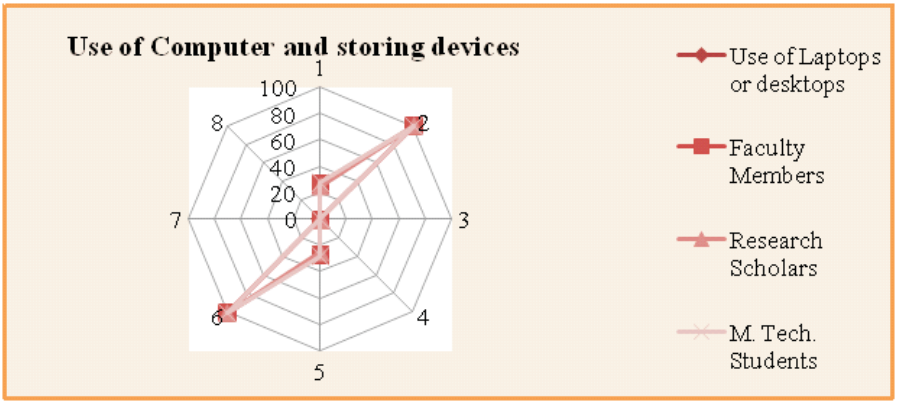

Fig-1.12: Use of Computer and storing devices

Table-1.12 reveals that, 100.00% faculty members, research scholars and the M. Tech. students are having and using their laptops or desktops and storing devices in their day to day teaching and learning processes. It is a good sign for them that, in the present context, without the own computer and storing devices like hard disks, pen drive etc., a man will face timely problems in their teaching learning processes and storing collected resources. So it is a positive and good trend for the faculty members, research scholars and the M. Tech. students in the engineering institutions over Bhubaneswar of Odisha.

TESTING OF HYPOTHESES

Hypotheses are considered as the primary instruments in research. It suggests on new experiments and observations for testing the formulated hypotheses and for becoming any investigation more imperative. The results of the formulated hypotheses of this investigation have been tasted based upon obtained data and their implications which are presented in the following manner:

The first hypothesis is that, "As the students, research scholars and the faculty members in the engineering discipline are conscious, they must have been aware about the electronic resources" has come true as evident from table-1.3 that majority of (faculty members- 83.33%, research scholars- 73.33% and the M. Tech. students-73.33%) are well aware about the electronic resources respectively.

The second hypothesis is that, "Present day engineering technology is basing upon the computer technologies and the use of different databases like, IEEE, Science Direct, ASCE, ASME, Proquest, Springer etc. must predominant on these e-resources of said databases" has come true as evident from table-1.6 that majority of respondents (faculty members- 80.00%, research scholars- 66.67% and the M. Tech. students-70.00%) are aware about the electronic resources and use IEL online followed by science direct (80.00%, 73.33% and 70.00%) to proquest (73.33%, 70.00% and 7.00%) and the other databases which are presented in the table-1.6 respectively.

The third Hypothesis that, "Infrastructural facilities and the management of the engineering institutions available to enable the students, research scholars and the faculty members to different electronic resources and services in their respective institutions" has come true as evident from table-1.11 that majority of respondents (faculty members-83.33%, research scholars-73.33% and the M. Tech. students-73.33%) have stated that, they are having best infrastructural facilities.

The fourth Hypothesis that, "Majority of the students, research scholars and the faculty members must have been used to store or use laptops or desktops for accessing electronic resources for their day to day lesson plans or teaching learning processes" has come true as evident from the table-1.12 that, 100.00% faculty members, research scholars and the M. Tech. students are having laptop or desktops and storing devices in their day to day teaching and learning processes respectively.

CONCLUSION

Academic is one of the major pillars for evolving knowledge society. To survive in this technocratic globalization era, dissemination of knowledge depends upon creation of innovations. The fulfilment of trained faculty members in the technical institutions in the post liberalization era is a new type of challenge. In other hands, the state of the art infrastructure, resource full library, workshop, laboratory are the important aspects for surviving the institution. As the research and academic output are depending upon the availability of the resources, the existence of the good infrastructure with resourceful libraries keeping good books, theses, dissertations, Journals are the requisite factors. The world is comparative and the mushrooming growth of the private engineering institutions makes the system cheaper. So, the challenge lies in balancing the system and reforming the technical education comparing with the other developed countries. Quality education is possible through the quality research, well equipped laboratory and workshop and modern state of the art class rooms. Here, the role of the library in imparting services for the growth and development of the engineering education is having a paramount importance. The utilization of the resources in the library and the knowledge to download maximum online resources are most important for the total growth of the engineering disciplines. Quality research enforces research integrity and to retain the knowledge in technical education.

REFERENCES

1.Aczel A D, Complete business statistics, 2006, TMH, New Delhi.
2.Bhatt S & Rana M S, E-information usage among engineering academics in India with special reference to Rajasthan State, Library Hi Tech, 29 (3)(2011), 496- 511.
3.Chu S K W & Law N, Development of information search expertise: Research Students' knowledge of databases, Online Information Review, 29 (6) (2005) 621-642.
4.http://nsse.indiana.edu/pdf/research_papers/faculty_do_matter.pdf (accessed on 15.01.2017)
5.http://www.open-science-repository.com/study-habits-and-attitudes-the-road-to-academic-success.html (accessed on 20.01.2017)
6.http://www.write.com/writing-guides/research-writing/research-process/online-sources-vs-print-sources-understanding-the-difference/ (accessed on 15.01.2017)
7.https://lagunita.stanford.edu/courses/Engineering/db/2014_1/about (accessed on 15.02.2017)
8.Johnson P C & Simonsen J E (2015) "Do engineering master's students know what they don't know?: Exploring abstracting & indexing service use and non-use, Library Review, 64 (1/2) (2015) 36 -57.
9.Majid S & Tan A T (2002), Usage of information resources by computer engineering students: a case study of Nanyang Technological University, Singapore", Online Information Review, 26 (5) (2002) 318-325.
10.Mendezabal M J N, Study Habits and Attitudes: The Road to Academic Success, Open Science Repository Education, (open-access), (2013) , doi: 10.7392/Education.70081928, (2013) (accessed on 20.02.2017)
11.Panneerselvam R, Research Methodology, (2004), PHI, New Delhi.
12.Sinh N H & Nhung H T H, Users' searching behaviour in using online databases at Vietnam National University-Ho Chi Minh City, Library Management, 33 (8/9) (2012): 458-468.
13.Zhang, G. & et al., Identifying Factors Influencing Engineering Student Graduation: A Longitudinal and Cross-Institutional Study, 93 (4) (2004): 313-320.

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