

## Status of ICT and Internet Literacy for Accessing to E-Resources Available under UGC-INFONET Digital Library Consortium : A Case Study

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### Abstract

*The present study has been undertaken with a view to know the status of ICT and Internet Literacy amongst the Assam University Library Users for accessing to E- Resources available under UGC-INFONET Digital Library consortium. The faculty, research scholars and students are mainly drawn from different parts of North Eastern States and few from other parts of the country which represent truly cosmopolitan population. The present work was carried out during July to August 2008. For that purpose, survey method has been adopted, which comprises of administration of questionnaire, observation of the participants, and interview of some of the participants for knowing the opinion of the respondents in respect of usage of Internet for their day-to-day activities and status of access to e-journals for their academic and research activities.*

*The self designed questionnaire comprising of 20 questions has been distributed amongst the randomly selected 480 samples. out of which 324 respondents have responded. The present investigation is delimited to the randomly selected population of Assam University Library Users who are regularly visiting Assam University Library and using the Internet for accessing to the e-resources / web resources available under the UGC-INFONET Digital Library Consortia of INFLIBNET/ UGC.*

*On the basis of filled up questionnaire received from the respondents, data has been analysed and tabulated using SPSS Software. For data analysis percentage technique, has been adopted. Due to paucity of space important results findings have been enumerated in brief.*

*The paper highlights the important survey findings in respect of ICT and Internet Literacy, E-resources use pattern and attitude of library users towards the electronic resources, which have been made available to them under UGC-INFONET Digital Library Consortium. Besides this, some suggestions and recommendations have also been enumerated in brief.*

**Keywords:** ICT Literacy, Internet Literacy, E- Resources, UGC-INFONET Digital Library Consortium, INFLIBNET Centre, North Eastern Region of India, Assam University, Silchar



## 1. Introduction

Information and Communication Technology (ICT) is one of the important buzzwords of today's ICT world. It has changed the society into information society and our way of life. It has penetrated in everywhere and its makes our life comfortable and easy. Information and Communication Technology (ICT) is a product of information age and technology. It has been regarded as a vehicle for future development, opportunities, challenges and competition that enables information to be collected and used. In this history of human civilization, no scientific discoveries had as comprehensive impact as ICT has. Information and Communication Technology (ICT) is convergence of computers and communication technology which makes processing, storage, and its retrieval very faster instant and effective.

On the other hand it may be noted that the Internet is one of the most important and complex innovations of mankind. It is a powerful means of communication, dissemination and retrieval of information. It is a network of network connecting thousands of smaller computer networks together so that other networks may share information present in one network. It is one of the powerful / effective tools or technologies ever produced for getting information on fingertips from any part of the world even sitting at ones own location. Now the facility of Internet has been increasingly used for educational course delivery (Sinha, 2004 A).

The present work was carried out during July to August 2008. The present study has been undertaken with a view to know the status of ICT and Internet Literacy amongst the Assam University Library Users for accessing to E- Resources

available under UGC-INFONET Digital Library consortium. The faculty, research scholars and students are mainly drawn from different parts of North Eastern States and few from other parts of the country which represent truly cosmopolitan population. Therefore the present investigation is delimited to the randomly selected population of Assam University Library Users who are regularly visiting Assam University Library and using the Internet for accessing to the e-resources / web resources available under the UGC-INFONET Digital Library Consortia of INFLIBNET/ UGC.

For that purpose, survey method has been adopted, which comprises of administration of questionnaire, observation of the participants, and interview of some of the participants for knowing the opinion of the respondents in respect of usage of Internet for their day-to-day activities and status of access to e-journals for their academic and research activities. The self designed questionnaire comprising of 20 questions has been distributed amongst the randomly selected samples for data collection. The questionnaire was distributed to 480 samples, out of which 324 respondents have responded. On the basis of filled up questionnaire received from the respondents, data has been analysed and tabulated using SPSS Software. For data analysis percentage technique, has been adopted. Due to paucity of space important results findings have been enumerated in brief. The paper highlights the important survey findings in respect of Internet Awareness, Internet Use Pattern and attitude of library users towards the electronic resources, which have been made available to them under UGC-INFONET Digital Library Consortium. Besides this, some suggestions and recommendations have also been enumerated in brief.

### 1.1 North Eastern Region of India

North Eastern Region (N E Region) of India has attracted attention of the government of India since two decades for overall development of the region which comprises of seven states which is popularly known as seven sisters and recently in 2001 the eight States ‘Sikkim’ has been included in the North Eastern Region. These states are viz., Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura.

### 1.2 Assam University (A Central University), Silchar

Located in the heart of nature, the Assam University was established on January 21, 1994 at Silchar a District town of Cachar in Southern Assam by an Act XIII of the Parliament promulgated in 1989. It has two campuses Viz., Assam University Main Campus at Durgakona, Silchar (Cachar) and its Satellite Campus at Diphu, Karbi Anglong. In a short span of time, since its inception, the university has taken long strides and today it occupies its permanent campus at Durgakona, Cachar with 34 Post-Graduate Departments and 7 Inter-Disciplinary Centres. These departments are distributed under 16 Schools of Studies.

In Diphu Campus, eight Post-Graduate Departments and two Study Centres have been established. This University serves the aspirations of the academia and the students of the southern part of the State of Assam comprising the five Districts of Cachar, Hailakandi, Karimgunj, North Cachar Hills, and Karbi Anglong. It is a teaching –cum- affiliating University having 56 colleges of Degree and Professional level.

### 1.2.1 Rabindra Library (Central Library), Assam University

The Knowledge Resources available in Rabindra Library (Central Library) have been categorized in 13 collections arranged in separate Hall. At present the library has more than 1,25,000 books, which includes Textbooks, General books, Reference books relating to all disciplines. Assam University also subscribes to 410 Indian and 105 Foreign Journals with on-line access facilities. Assam University Library is also getting 5000+ e-resources under UGC-INFONET Digital Library Consortium. Access to DELNET Databases and On-Line Services is also available to us. Recently Assam University has been chosen as one of the Centre for JCCC Services which has been introduced by the INFLIBNET in collaboration with Informatics (India) Limited. (Sinha and Bhattacharjee, 2006, Sinha et. al. 2011).

### 1.3 Objectives of the Study

- ❖ To examine the status of ICT and Internet Literacy among the Assam University Library Users;
- ❖ To find out period from which the participants are using Internet;
- ❖ To evaluate the usage pattern, frequency of usage, amount of time spent for accessing to Internet and E-resources;
- ❖ To examine the preference of library users towards INFLIBNET Services ;
- ❖ To find out the problems faced by the Internet Users for accessing E-Resources;

❖ To examine the various suggestions put forwarded by the Library Users for the improvement of Internet Services being provided by Assam University Library.

#### 1.4 Delimitation of the Study

The present survey was carried out on the Assam University Library Users during July to August 2008. Therefore, the present investigation is delimited to the randomly selected population of Assam University Library Users who are regularly visiting Assam University Library for using the Internet for accessing to the e-resources available under the UGC-INFONET Digital Library Consortia of UGC/ INFLIBNET.

## 2. Review of Literature

For the present study the primary as well as the secondary source of literatures has been consulted. Some journal articles and theses have also been consulted. Previously many studies have been carried out in recent years on use of Internet in university library (Mishra and Satyanarayana, 2001) Internet for Libraries. ( Kamlavijayan, 2001) ; Internet and its use in SJCE (Kumbar and Shirun, 2003); Internet usage by students and faculty members of Kuvempu University ( Birader, Rajashekhar, and Sampat Kumar, 2004); Use of Internet by teachers and students in Shaheed Bhagat Singh College of Engineering and Technology (Rajiv Kumar and Amritpal Kaur 2004); Internet use by the researchers in Punjab University, Chandigarh (Mahajan 2005) ; Internet use by the Research Scholars in University of Delhi (Madhusudan, 2007); Use of Internet in Engineering College of the Districts of Karnataka State (Kumbhar and Vasunatha 2007) ; Sharma, Singh and Mishra, 2008 has also studied the usage

pattern of Internet by the teachers and research scholars of Kurushetra University ; Use of Internet by the Students of Bidhan Chandra Krishi Viswavidyalaya (West Bengal) (Das and Basu (2009) ; and Use of Internet among the Research Scholars of the Faculty of Science, University of Allahabad (Devender Kumar and Shukla, 2009) .

Sinha (2009) has also carried out a survey on specialized group of samples who belongs to scientific disciplines (Participants of Workshop on Basic Science Research) in terms of ICT and Internet awareness and observed the similar trends of finding towards awareness of ICT and Internet and utilization of E-Resources available under UGC-INFONET Programme. Rao (2010) in his study of Internet Use in Academic Library discusses the advantages of the Internet and its impact upon academic libraries. The practical application of e-mail, Internet and other electronic media has been also described in brief and need of more application of ICT / computers in libraries has been emphasized. Rahman and Ali (2010) conducted a study on the access and utilisation of the Internet based library services available to the faculty members of Z.H. College of Engineering and Technology, Aligarh Muslim University.

A number of studies have been conducted on Information Resources on the Internet for Higher Education and Research (Parekh, Harsha. 1999) ; Use of E-Resources by IT Professionals ( Gireesh and Rajashekara, 2009) ; Use of Information Resources by the Researchers in the University Libraries in Karnataka (Gowda and Shivalingaiah, 2009); Use and Impact of Digital Resources (Mendhe, Taksande, and Taksande 2009; Use and Usage Statistics of Electronic Resources at Central Library, Tezpur University (Mishra and Gohain, 2010).

From the review of literature on the use of Internet, awareness of ICT and Internet, Usage of off-line and on-line e-resources (CD-ROM Databases and E-Journals ) , it has been found that most of the study have been carried out in Northern India (Rajiv Kumar and Amritpal Kaur 2004; Singh, Bhupesh Kumar and Kulvir Kaur , 2006; Mahajan, 2005; Madhusudan , 2007 ; Sharma , Singh and Mishra, 2008 ; Rahman and Ali , 2010; and Southern India (Birader, Rajashekhar, and Sampat Kumar , 2004; Khumbar and Vasuntha Raju (2007) Rao, 2010 and Singson and Leeladharan 2010). Except few study conducted by Sinha, 2004 on Internet Use pattern of the academic community and local population of Barak Valley and another study on Information Communication Technology (ICT) and Internet Awareness Amongst the College and University Teachers (Sinha 2008 ) ; participants of Workshop on Basic Science Research (Sinha 2009) and Borthakur, Das and Gohain , 2010), no comprehensive and substantial studies have been carried out on the ICT and Internet Literacy for accessing to E-Resources available under UGC-INFONET Digital Library Consortium in North Eastern Region of India.

### **3. Research Methodology**

For any empirical study, the researcher has to identify the method of study. As per the requirement of the study, survey method has been chosen for carrying out the present investigation, which comprises of administration of questionnaire, observation of the participants, and interview of some of the respondents for knowing their opinion in respect of usage of ICT Literacy for Accessing to E-resources available under UGC-INFONET Digital Library Consortium and also other Internet/ Web Resources for their day-to-day academic and research activities.

For the present study the sample were drawn from the 31 Departments available under 09 Schools of Assam University, Silchar. The samples comprise of faculty members, M. Phil/ Ph.D. Research Scholars, JRF/SRF/RA, Under-Graduate / Post Graduate Students, Officers and Staff members of Assam University, Silchar. Altogether 480 number of library users were selected for the present study. The close-ended questionnaire was distributed amongst them and response was collected. In some cases Interview and Observation of respondents was also carried out to know their awareness and actual usage of Internet and E-Resources.

The self –designed questionnaire comprises of 29 questions has been distributed among the selected library users .The questionnaire, was designed keeping in view to evaluate the ICT and Internet Literacy for accessing to Internet and E-Resources Usage Pattern of the Library Users. The filled up questionnaires have been collected from the respondents for the data analysis and interpretations. On the basis of filled up questionnaire the data has been analysed and tabulated using SPSS .For data analysis only frequency/ percentage technique, has been adopted.

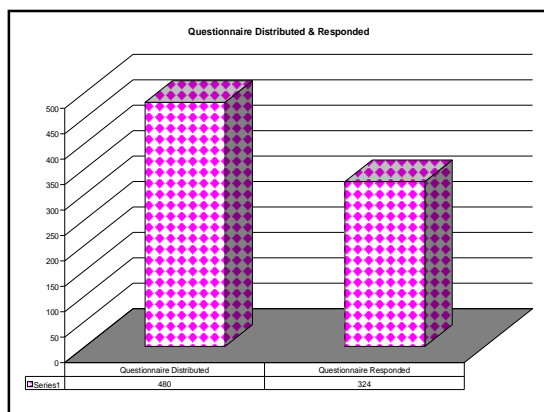
### **4. Data Analysis and Interpretations**

#### **4.A General Characteristics and Personal Background of the Respondents**

After collection of filled up questionnaire from the respondents the data has been tabulated using SPSS Software and in the present report only results has been shown in percentage (%). All these results have been shown in the tabular format.

#### 4. A.1 Distribution of Questionnaire

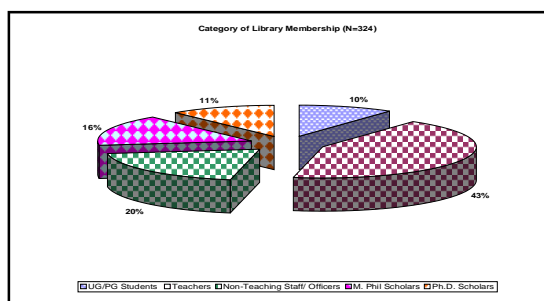
Questionnaires were distributed to 480 respondents and out of which 324 (67.007 %) respondents have responded (Graph and Table 1).



Graph and Table 1: Questionnaire Distributed/ Received (N=480)

#### 4. A.2 Category of Library Membership Wise Analysis

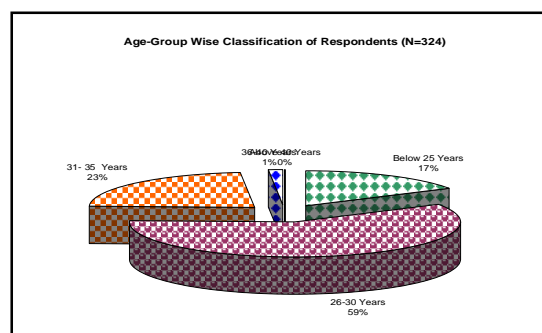
In the present survey response of teachers (43.2 %) is highest and remarkable which is followed by research scholars (27.1 %) and officer & staff (19.8 %) whereas responses from the UG/PG students is not encouraging (9.9 %) which indicates lack of awareness of using Internet/ E-journals access facilities available in university library amongst the UG/PG Students (Graph and Table-2)



Graph and Table 2: Category of Library Membership (N=324)

#### 4. A.3 Age Group Wise Classification of Respondents

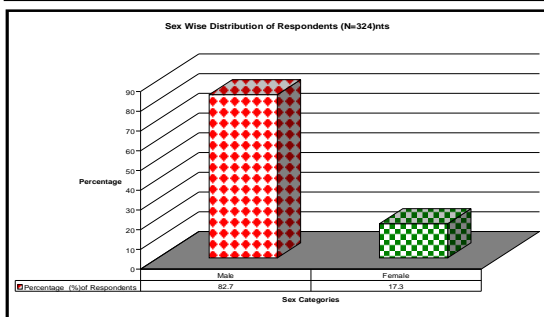
Age - Group wise analysis shows that maximum of 184 (56.8 %) respondents belongs to 26 to 36 Years age group which is followed by 72 (22.2 %) respondents for 31-35 Years and 52 (16.0 %) respondents fall under the category of below 25 years of age whereas only 04 (4.9 %) respondents are above 36 years of age which indicates that usage of Internet and Access to E-journals/ E-resources are more popular amongst the younger generation people and inclination of elderly people is comparatively lower for Internet access. (Graph and Table-3). Therefore there is a need to popularize the usage of Internet and E-journals / resources amongst the elderly people who are hesitant in using ICT/ Internet for academic purposes.



Graph and Table 3: Age-Group Wise Classification of Respondents (N=324)

#### 4. A.4 Sex Wise Classification of Respondents

Gender analysis shows that out of 324 respondents, 268 (82.7 %) respondents belong to male category whereas 56 (17.3 %) respondents are from the female category a participant (Graph and Table 4) which indicates that the awareness of ICT, Internet and access to E-resources is comparatively lesser in female participants.



**Graph and Table 4: Sex Wise Distribution of Respondents (N=324)**

**4. B ICT and Internet Literacy/ Awareness and Internet Usage for on Line Access to E-Resources**

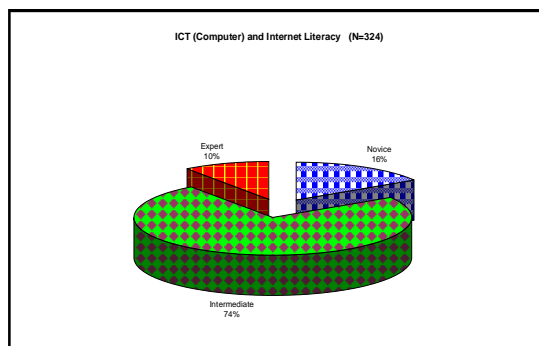
**4. B.1 ICT and Internet Literacy**

The ICT and Internet Literacy as indicated in Table 5 shows that out of 324 respondents, the maximum number (240 = 74.1 %) of respondents are ICT and Internet Literate whereas 52 (16.0 %) respondents belongs to Novice category and only 32 (9.8 %) respondents are claimed themselves as an Expert in using ICT and Internet which indicates that most of the library users are aware of ICT and Internet usage for their day to day academic and entertainment activities. There is a need to make all of them as an expert in handling the Internet for online access to the e-resources for their academic and research activities (Graph and Table-8).

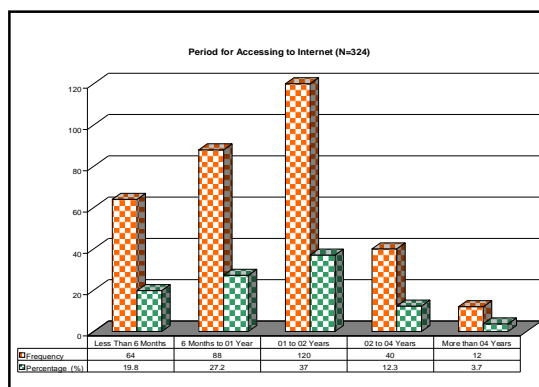
**4. B.2 Period for Internet Access**

Survey result as indicated in Graph and Table 6 shows that out of 324 respondents, 120 (37.0 %) library users have started using ICT/ Internet since last 1 to 2 years which is followed by 88 (27.6 %) respondents who are using computer / Internet in between six months to one year and 64 (19.8 %) library users have started using computer and

accessing to Internet since last six months. They might be novice in handling ICT and Internet who may require awareness training for accessing to e-resources being provided by the Assam University Library through INFLIBNET Centre, Ahmedabad. Comparatively only 40 (12.3 %) respondents are using computers / ICT/ Internet since last two to four years whereas only 12 (3.7 %) respondents are using computers / Internet since more than four years which shows that the number of ICT/ Internet experts are very less and most of the respondents have started using Internet since last four years.



**Graph and Table 5: ICT (Computer) and Internet Literacy (N=324)**

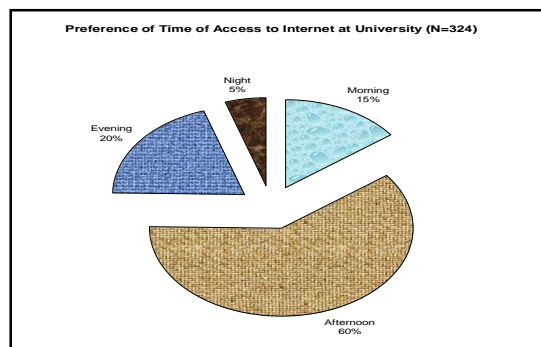


**Graph and Table 6: Period for Accessing to Internet (N=324)**

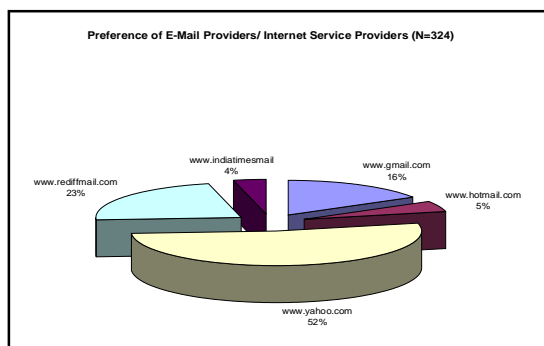
**4. B. 3 Preference of E-Mail Providers/Internet Service Providers**

Survey results as shown in Graph and Table 7 shows the preference of E-mail providers / Internet Service Providers (ISPs) which indicates that out of 324 respondents, maximum number of library users (168 = 51.9 %) are using free Yahoo mail services for e-mail which is followed by Rediffmail (72 = 22.2 %) and Gmail ( 52 = 16.0 %) whereas Indiatimes mail ( 12 = 3.7 %) hotmail ( 16 = 4.9 %) and BSNL Broadband ( 4 = 1.2 %) are comparatively less preferred mail service used by the library users. It is concluded that Yahoo Mail Service (168 = 51.9 %) is most popular mail service which is followed by Rediffmail Service ( 72=22.2 %), Gmail Service ( 52 = 16.0 %) whereas Hotmail Service (16 = 4.9 %) Indiatimesmail Service (12= 3.7 %) and BSNL / Sancharnet (4= 1.2 %) are preferred by less than 5 % respondents.

preferred by very few respondents (16 = 4.9 %) only.



**Graph and Table 8: Preference of Time of Access to Internet at University (N=324)**



**Graph and Table 7 : Preference of E-Mail Providers/ Internet Service Providers (N=324)**

**4. B.4 Preference of Time of Access to Internet at University**

The survey result as indicated in Graph and Table-8 shows that afternoon (196 = 60.5 %) is most preferred time which is followed by evening (64 = 19.8 %) , morning (48= 14.8 %) whereas night is



**4.B. 5 Preference and Ranking of Internet Tools and Services**

Types of Internet	R-1 (No. / %)	R-2 (No. / %)	R-3 (No. / %)	R-4 (No. / %)	R-5 (No. / %)	R-6 (No. / %)	R-7 (No. / %)	R-8 (No. / %)	R-9 (No. / %)	R-10 (No. / %)	R-11 (No. / %)	R-12 (No. / %)
E-mail Services	<b>228</b> (70.4)	<b>88</b> (27.2)	<b>4</b> (1.2)	<b>4</b> (1.2)	0	0	0	0	0	0	0	0
WWW	88 (27.2)	<b>228</b> (70.4)	8 (2.5)	0	0	0	0	0	0	0	0	0
Online Access	8 (2.5)	88 (27.2)	<b>228</b> (70.4)	0	0	0	0	0	0	0	0	0
Blogs	0	0	44 (13.6)	<b>132</b> (40.7)	60 (18.5)	80 (24.7)	4 (1.2)	4 (1.2)	0	0	0	0
Open Source Resources	4 (1.2)	4 (1.2)	80 (24.7)	80 (24.7)	<b>88</b> (27.2)	64 (19.8)	4 (1.2)	0	0	0	0	0
Wikipedia	0	0	80 (24.7)	36 (11.1)	84 (25.9)	<b>88</b> (27.2)	<b>36</b> (11.1)	0	0	0	0	0
Chatting	0	0	0	0	0	0	<b>156</b> (48.8)	136 (42.0)	12 (3.7)	8 (2.5)	12 (3.7)	0
Social Network	0	0	0	0	72 (22.2)	60 (18.5)	84 (25.9)	<b>88</b> (27.2)	28 (6.2)	0	0	0
TELNET	0	0	0	0	0	0	4 (1.2)	24 (7.4)	<b>136</b> (42.0)	108 (33.3)	52 (16.0)	0
List Serve	0	4 (1.2)	0	0	0	0	16 (4.9)	4 (1.2)	92 (28.4)	<b>124</b> (38.3)	84 (25.9)	0
Web 2.0	0	0	0	4 (1.2)	0	0	0	8 (2.5)	76 (23.5)	68 (21.0)	168 (51.9)	0
BBS	4 (1.2)	0	0	8 (2.5)	8 (2.5)	4 (1.2)	40 (12.3)	104 (32.8)	8 (2.5)	12 (3.7)	8 (2.5)	128 (39.5)

( Source= Primary Data )

**Table 9: Preference and Ranking of Internet Tools/ Services (N=324)**

Preference of Internet Services /Facilities	Frequency (Percent)	R a n k
E-mail Services	228 (70.4)	I
WWW	228 (70.4)	II
Online Access	228 (70.4)	III
Blogs	132 (40.7)	IV
Open Source Resources	88 (27.2)	V
Wikipedia	88 (27.2)	VI
Chatting	156(48.8)	VII
Social Network	88(27.2)	VIII
TELNET	136 (42.0)	IX
List Serve	124 (38.3)	X
Web 2.0	168(51.9)	XI
BBS	128 (39.5)	XII

( Source= Primary Data )

**Table 9A: Ranking of Preference of Internet Services (N=324 for each Services)**

Survey result as indicated in Table- 9 and Table-9A reveals the ranking of various Internet tools and services. Internet services ranks at first place (228 = 70.4 %) which is followed by World Wide Web (228= 70.4 %), Online Access (228= 70.4 %), Blogs (132 = 40.7 %) Open Source Resources (88= 27.2 %) and Wikkipaedia (88 = 27.2 %) which ranks at 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> 5<sup>th</sup> and 6<sup>th</sup> respectively whereas other Internet services / tools like Chatting (156 = 48.8 %) Social Network sites (88= 27.2 %), Telnet (136= 42.0 %), List Serve (124= 38.3 %), Web 2.0 Technology (168 = 51.9 %) and Bulletin Board Services (128= 39.5 %) ranks at 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> respectively. It is concluded that E-mail Services, WWW, Online Access and Blogs are more popular Internet Services and Tools. It is interesting to note that the Social Networking sites and Web 2.0 Technologies are also gaining popularity amongst the Library users.

#### 4. B.6 Ranking of Preference of Place to Access Internet Services

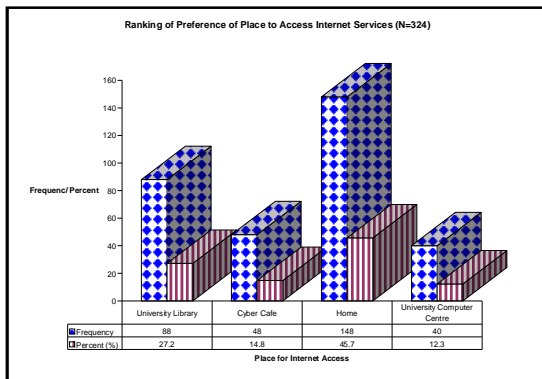
The survey result as shown in Graph and Table – 10 reveals that out of 324 respondents, 148 (45.7 %) respondents prefer home for Internet access which is placed at 1<sup>st</sup> Rank, whereas University Library (88 = 27.2 %) is placed at 2<sup>nd</sup> Rank While Cyber Café (48 = 14.8 %) and University Computer Centre (40= 12.3 %) ranks at 3<sup>rd</sup> and 4<sup>th</sup> placed respectively (Graph and Table-10).

#### 4. B. 7 Frequency of E-Mail/ Internet Access

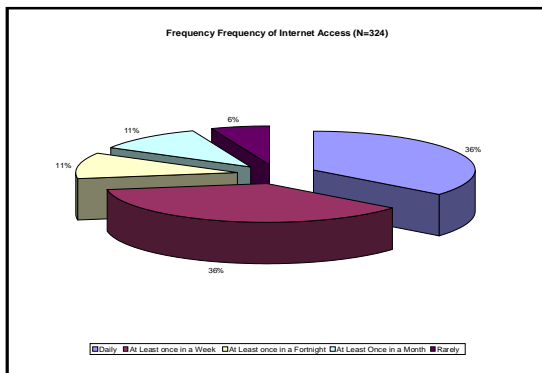
Most of the respondents (124= 38.3 %) access Internet on at least once in a week, whereas 120 (37.0 %) respondents access Internet on daily basis. A small number of respondents (36 = 11.1 %) access to Internet at least once in a fortnight whereas only 20 (6.2 %) respondent access E-mail / Internet service once in a month. Therefore it is concluded that the maximum number of respondents prefer to access Internet on weekly (124 = 38.3 %) and daily basis (120= 37.0 %) (Graph and Table-11).

#### 4. B. 8 Purpose of Using Internet

The survey result as shown in Graph and Table-12 shows the various purposes of using Internet. Out of 324 respondents , only 80 (24.7 %) library users are using Internet for all purposes listed in Table-17 which is followed by 56 (17.3 %) respondents who are accessing to the Internet for research work, sending and receiving e-mails and making personal contacts by using social networking sites like Orkut, LIS Link, WYAN, hi 5 , and many other such sites whereas about 48 ( 14.8 % ) , 44 (13.6 %) and 40 (12.3 %) library users are surfing Internet for e-mails, updating knowledge and preparing class notes/ lecture respectively.



Graph and Table 10: Ranking of Preference of Place to Access Internet Services (N=324)

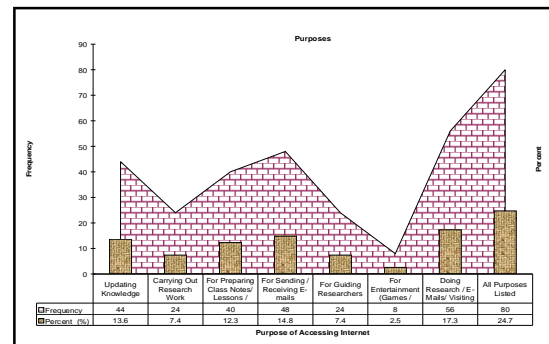


Graph and Table 11: Frequency of E-Mail/ Internet Access (N=324)

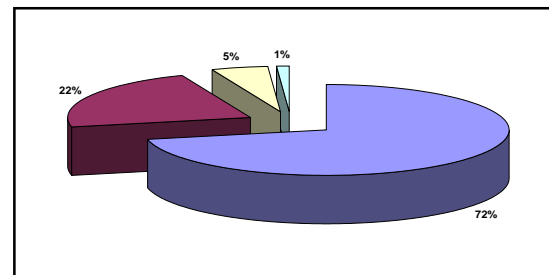
4. B.9.1 Amount of Time Spent on Internet

The library users are spending time for Internet access as per their requirement. Out of 324 respondents, a maximum of 232 (71.6 %) library users are spending less than five hours in a week time for accessing to Internet which is followed by 72 (22.2 %) respondents who are surfing Internet for 5 to 9 hours in a week whereas only 16 (4.0 %) and 04 (1.2 %) respondents are using Internet for 10 to 14 hours and 15 to 19 hours a week respectively. (Graph and Table-13) which indicates that maximum number of respondents spend very

less time for accessing to the Internet which is might be due to their less number of terminals and more numbers of Internet Users or busy class schedule of the library users. Therefore, there is an urgent need of increasing the number of Internet terminals and also making the library users aware about the various electronic resources available under the UGC-INFONET Digital Library Consortium and other open source resources for academic and research purposes.



Graph and Table 12: Purpose of Using Internet (N=324)

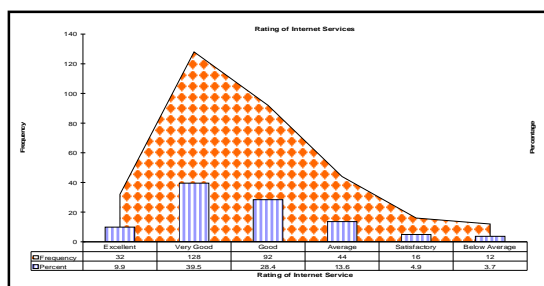


Graph and Table 13: Amount of Time Spent for Internet Access (N=324)

4. B. 9.2 Rating of Internet Services

A maximum of 128 (39.5 %) and 92 (28.4 %) library users have rated the Internet services provided by Assam University Library as Very Good and Good respectively whereas 32 (9.9 %) respondents rated the Internet services as an

Excellent one. On the other hand only 44 (13.6 %), 16 (4.9 %) and 12 (3.7 %) respondents have rated the Internet Services as Average, Satisfactory and Below Average respectively (Table-14). The result reveals that most of the library users are satisfied with the Internet services available in Assam University Library for accessing to e-resources under UGC-INFONET Digital Library Consortium and other services. But for providing excellent services, many improvements like increase in number of access points, procurement of e-resources (Science Direct from Elsevier Science, Emerald Journals etc. ) have to be made , dedicated power supply and organize e-resources awareness programme for the optimum utilization of e-resources (Graph and Table-14).



Graph and Table 14: Rating of Internet Services (N=324)

#### 4. C. On-Line Access to E-Resources Available under UGC-INFONET Digital Library Consortium of INFLIBNET

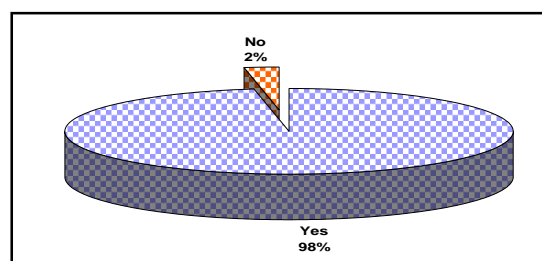
##### 4. C. 1 Awareness of UGC-INFONET Digital Library Consortium Programme

Survey result as shown in Graph -15 shows that out of 324 respondents, a maximum of 316 (97.5 %) respondents are aware of the UGC-INFONET Digital Library Consortium Programme of UGC for access to more than 5000 + e-resources available

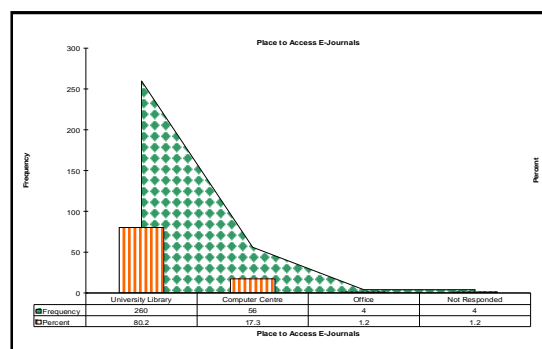
under this programme whereas only few respondents (8= 2.5 %) are not aware of the said programme.

##### 4. C. 2 Preference of Place for Accessing to the E-Journals / E-Resources

The survey result as shown in Graph and Table-16 reveals that out of 324 respondents maximum number of respondents (260= 80.2 %) prefer University Library to access e-journals/ e-resources whereas Computer Centre (56 = 17.3 %) is second choice and very few respondents used to access e-resources from office (4= 1.2 %).



Graph 15: Awareness of UGC-INFONET Programme (N=324)

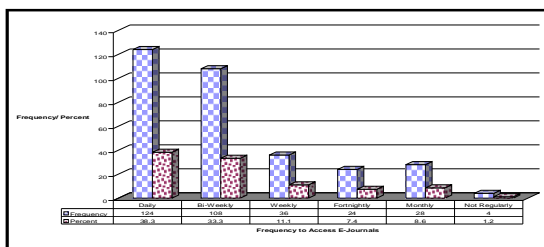


Graph and Table- 16: Preference of Place of Accessing to e-journals (N=324)

##### 4. C. 3 Frequency of E-journals Access

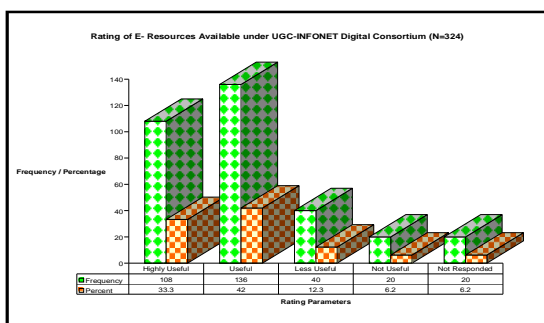
As we know that scientist and researchers are more interested in accessing to scholarly scientific e-

journals for their research work, in this study the author tries to know the frequency of the participants to access e-journals from INFLIBNET web site which is given to the selected around 172 universities across India. Out of 324 respondents, a maximum of 124 (38.3 %) respondents are accessing e-journals on daily basis and 108 (33.3 %) respondents access e-journals on Bi-weekly basis whereas 36 (11.1 %), 24 (7.4 %) and 28 (8.6 %) respondents preferred to access e-journals on weekly, fortnightly, and monthly basis respectively. While very few (04= 1.2 %) respondents are not regular in accessing the facility of e-journals/ e-resources available under UGC-INFONET Digital Library Consortium (Graph and Table 17).



Graph and Table 17: Frequency of Accessing to E-Journals/ E-Resources (N=324)

4. C. 4 Rating of E- Resources Available under UGC-INFONET Digital Consortium



Graph and Table 18: Rating of E- Resources Available under UGC-INFONET Digital Consortium (N=324)

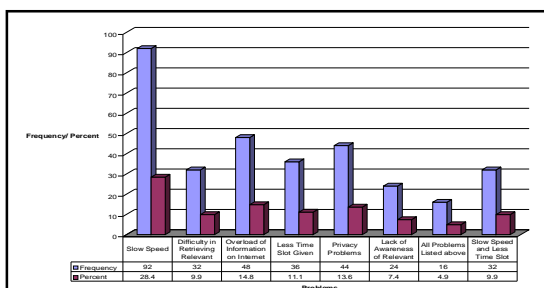
The survey result as shown in Table-18 indicates that a maximum of 108 (33.33 %) respondents have rated e-resources available under UGC-INFONET is highly useful which is followed by 34 (42.2 %) respondents who are saying that the UGC-INFONET resources are useful whereas 10 (12.3 %) respondents rated these resources as less useful and 20 (6.25) are saying that it is not useful because the resources are mainly available in the areas of science & technology and biomedical sciences and for social science & humanities users the substantial e-resources have not been included. While very few respondents (20 = 6.2 %) have not responded (Graph and Table-18)

4. D Problems and Suggestions for Internet and On-Line Access to E-Resources

4. D. 1 Problems in Internet Usage / Access to Internet

The survey results as shown in Graph and Table-19 reveal that there are many problems while surfing the Internet for accessing to the e-resources under UGC-INFONET Digital Library Consortium. Out of 324 respondents, a maximum of 92 (28.4 %) respondents are complaining about the slow speed of Internet and 48 (14.8 %) respondents say that there is overload of information on Internet, which creates problems in searching relevant information whereas 32 (9.9 %) respondents find difficulty in locating relevant information from the many listed web sites after Google Search. About 44 (13.6 %) respondents pointed out privacy problems while surfing the Internet while 36 (11.1 %) respondents are complaining about less time slot given for Internet access. Very few (16= 4.9 %) respondents are complaining about all the problems listed in the table while 32 (9.9 %)

respondents are having opinion that there are two important problems which are regarding the slow speed of Internet Connectivity and less time slot given to the library users for accessing to the e-resources available under UGC-INFONET Digital Library Consortium and other relevant resources available on Internet.



**Graph and Table 19: Problems in Internet Usage / Access to Internet (N=324)**

**4. D.2 Suggestions Proposed by the Respondents**

There are various suggestions put forwarded by the respondents which are listed in Table- 20 which reveals the Need Internet Training (192 = 59.3 %); more number of terminals 312 = 96.3 %) to be added for Internet access; dedicated power line (300 = 92.6%); installing high capacity UPS (260 = 80.2 %); high capacity voltage stabilizers (268 = 82.7 %); more journals in Humanities, Social Science and Languages needs to be added (220 = 67.9 %); change in morning time slot for research scholars (232 = 71.6 %); provision of separate terminals to teachers, research scholars and staff ( 276 = 85.2 %) and provision for extended hours ( 280 = 86.4 %) of Internet Access . The findings show the requirement of the library users for getting instant and dedicated access to Internet for the academic and research & development activities.

**Status of ICT and Internet Literacy for Accessing to...**

Suggestions	Yes (%)	No (%)	Total (%)	Rank
Do you Need Internet Training	192 ( 59.3)	132 (40.7)	324 (100.0)	IX
Require More Terminals to Access Internet	312 (96.3)	12 (3.7)	324 (100.0)	I
Need of Dedicated Power Supply	300 ( 92.6)	24 (7.4)	324 (100.0)	II
Need for Installing High Capacity Server	260 ( 80.2)	48 (19.8)	324 (100.0)	V
Need for Installing High Capacity Voltage Stabilizers	268 (82.7)	56 (17.3)	324 (100.0)	V
Need of More Journals on Social Science / Humanities/ Languages	220 ( 67.9)	180 (32.1)	324 ( 100.0)	VIII
Need for Morning Time Slot for Research Scholars	232 ( 71.6)	92 (28.4)	324 (100.0)	VII
Provide Separate Terminals for Teachers/ Research Scholars/ Staff	276 (85.2)	48 (14.8)	324 (100.0)	IV
Require Extended Hours for Internet Facility	280 ( 86.4)	44 (13.6)	324 (100.0)	III

( Source= Primary Data )

**Table 20: Suggestions Proposed by the Respondents for its Implementation (N=324)**

Besides all the suggestions listed in Table- 20 some suggestions pointed out by few library users are listed below:

- ❖ Provide Internet Connectivity to all the Departments/ Centres/ Offices
- ❖ Include the Science Direct of Elsevier Science publications especially for Bio-Medical Sciences / Life Sciences/ Physical Science
- ❖ Increase in number of Internet Access Points/ Terminals

- ❖ Printing facilities should be made available to library users
- ❖ Besides Teachers/ Research Scholars, UG/ PG Students should also encouraged to access to Internet
- ❖ Provision of separate Internet Access Hall for Teachers/ Research Scholars

## 5. Discussion

### 5.1 Internet Access and Usage of Electronic Journals

Singh, Bhupesh Kumar and Kulvir Kaur (2006) in a study of usage of electronic journals found that 83-100 % of various category of users of Guru Nanak Dev University, Amritsar prefer electronic medium over the print journals as the electronic journals are becoming an effective and popular medium of communication these days amongst the researchers which has led electronic publishing a new methods of information communication.

Sharma , Singh and Mishra, 2008 has also studied the usage pattern of Internet by the teachers and research scholars of Kurushetra University and found that 100 % respondents use Internet for e-mail which is followed by research purposes (83.33 %) and 83.33 % respondents use Google as their favorite search engine for accessing information . About 64.16 % respondents reported about privacy problems while accessing information whereas 60.83 % respondents are fully satisfied with the Internet services available at Kurukshetra University.

It has been also found that the usage percentage is higher has some of their counterparts in other institutions. More than 80 % respondents find e-journals easier to access, time saving and less

expensive as compared to the print journals. It has been noted that 41-46 % of the users satisfied with services being provided by the publishers of e-journals. However, most of them were not satisfied with the quality of Internet Connectivity provided by the university Guru Nanak Dev University and the library users have put forwarded some suggestions regarding improvement of Internet Connectivity (Singh, Bhupesh Kumar and Kulvir Kaur ,2006) out of which some of the suggestions are similar to the present study like speed of Internet should be very high; Broadband Connectivity should be provided (at least up to 2 mbps line) and campus wide connectivity should be provided for non-stop 24x7 Internet access which should be at par with the other national level institutions of higher learning for high quality academic and research activities. The respondent also suggested for print copy of some selected journals for archival purposes and printing facility should also be provided to the users.

Rahman and Ali ( 2010) conducted a study on the access and utilisation of the Internet based library services available to the faculty members of Z.H. College of Engineering and Technology , Aligarh Muslim University which include information on the various aspect of the Internet based services, frequency of library visit, purpose of library visit Internet usage, purpose of using the Internet services, se of popular search engines , awareness about Internet services, number of e-journals consulted and behaviour of library staff towards the users. The study reveals that the most of the faculty members utilise the services offered by the college library and emphasizes that the services may be improved further after proper training for familiarity with the latest information and

communication technologies and improvement of the existing ICT infrastructure.

The important findings of the study reveals that the maximum number of faculty members (Lecturer Grade) use Internet based library and information services regularly. The majority of users (54.55 % ) consulted On-line e-journals and maximum number of users access Internet for at least one hour on daily basis which is due to inconvenience of time of Internet access but majority of users are satisfied with the available ICT infrastructure for providing Internet Services in ZHCET Library. Some suggestions have been put forwarded by the respondents like 24x7 Internet facility in the campus ; higher Internet Speed; need of extensive ICT/ Internet Training programme to be organised in the campus; installation of latest versions of Anti-Virus Software, increased number of access points or Internet terminals which are similar to the present findings.

Rao (2010) in his study of Internet Use in Academic Library discusses the advantages of the Internet and its impact upon academic libraries. The practical application of e-mail, Internet and other electronic media has been also described in brief and need of more application of ICT / computers in libraries has been emphasized.

Borthakur, Das and Gohain (2010) studied the usage of e-resources and traces the availability of e-resources under UGC-INFONET E-Journal Consortium in the selected three University Libraries of Assam which highlights the status of current usage of e-journals and publisher wise usage of journals amongst the library users of these three universities viz., Dibrugarh University, Dibrugarh; and Tezpur University, Tezpur; and Assam University, Silchar located in Assam. It was

observed that during 2009 the total number of download amongst these three universities are 12, 815 journal articles and the Springerlink journal articles (4,386 articles downloads) are used maximum by the users which corroborates with the findings of the present study which indicates that Springer link Journals are more popular amongst the library users of North Eastern Region.

From the usage statistics it was found that Tezpur University stands at 1<sup>st</sup> place for downloading articles ( 5896 articles) which is followed by Assam University and Dibrugarh University which indicates that the usage of e-journals which are freely available to the faculty and research scholars under UGC-INFONET E-Journals/ Digital Library Consortium is very poor in Assam in particular and North Eastern States in general . It might be due to lack of awareness amongst the library users especially amongst the faculty members and research scholars which needs to be taken care of.

The above findings are similar to the present investigation in which the usage of e-journals are not encouraging. Especially in the faculty of Humanities, Social Science and Languages, it has been found that the awareness of Internet/ E-resources is very poor in comparison to the scholars and faculty of science disciplines (Sinha2009). Therefore for the proper and optimum utilization of e-resources available under UGC-INFONET Digital Library Consortium, extensive user awareness programme should be organised frequently by the INFLIBNET Centre in collaboration with the concerned college/ university/ institutional libraries.

On the basis of the user statistics and for the effective utilisation of printed as well as e-resources



, Rabindra Library (Central Library) , Assam University , Silchar has started organizing Library Orientation –Cum-User Awareness Programme this year for newly admitted research scholars who are pursuing course work for Pre-Ph. D. Programme for one semester as per UGC Guidelines. Altogether 450 scholars have participated in this programme in order to have basic idea/ information in terms of library rules and regulations; availability of library resources (both printed and electronic); their locations; and the proper and effective utilization of printed and on-line/ off-line electronic resources available under UGC-INFONET Digital Library Consortium Programme.

## **5.2 Implication of Study**

From the review of literature on the use of Internet, awareness of ICT and Internet, Usage of off-line and on-line e-resources (CD-ROM Databases and E-Journals ) , it has been found that most of the study have been carried out in Northern India (Rajiv Kumar and Amritpal Kaur 2004; Singh, Bhupesh Kumar and Kulvir Kaur , 2006; Mahajan, 2006; Madhusudan , 2007 ; Sharma , Singh and Mishra, 2008 ; Rahman and Ali , 2010; and Southern India (Birader, Rajashekhar, and Sampat Kumar , 2004; Khumbar and Vasuntha Raju (2007) Rao, 2010 and Singson and Leeladharan 2010). Except few study ( Sinha, 2004; Sinha 2008; Sinha 2009, Borthakur, Das and Gohain , 2010) no comprehensive study has been carried out in North Eastern India.

As we know that in North Eastern Region, there are nine Central and two State Universities one Central for NIT ,one IIT and one IIM and four Medical Colleges / Institutions, three Agricultural Universities / Institutions. All Central and State Universities and Institutions have been give access

to either e-resource available under UGC-INFONET Consortium and or through INDEST Consortium (especially NITs, IITs, and IIMs) and Central Government has been paying millions of rupees to get access of scholarly publications from more than 25 world class publishers and aggregators.

Therefore, it is obvious that the electronic resources available under these two consortia should be fully utilized for the academic and research activities but unfortunately the resources has not been used optimally which defeat the very purpose of acquiring e-resources for the faculty members, research scholars and post-graduate students which might be due to lack of awareness amongst the research scholars and faculty members of this region. As we are connected to Internet and getting access to world class scholarly publications, no longer we are located in remote area

Therefore there is a need of organizing extensive user awareness programme for effective utilization of library resources (both printed as well as electronic). In order to have back ground study on the awareness of ICT and Internet for the access to e- resources which are available under UGC-INFONET E-Journal/ Digital Library Consortium, the present study has been conceived and the findings will be of immense use of the planner and decision makers to make necessary comprehensive user awareness programme / ICT or Internet Training for maximum utilization of the resources.

## **6. General Suggestions and Recommendations**

Followings are few suggestions and recommendations for Usage of ICT/ Internet and on-line access to e-resources amongst the Assam

University Library users for imparting ICT/ Internet Awareness Training to the students, research scholars, teachers and administrative staff:

❖ Empowering Library Users for ICT / Internet/ E-Resources Usage: Make all the students, research scholars, faculty members and staff Information Technology empowered by giving them an opportunity to attend ICT/ Internet related short term courses and ICT/ Internet Awareness / training programmes conducted by the Computer Centre, Library and IT / Computer Science Dept. time to time. These Depts. should come forward with regular short term ICT/ Internet Awareness package to empower the library users for ICT / Internet usage for day to academic activities and for locating and accessing to the e-resources available on Internet.

❖ Solution of the Problems faced by the Library Users: The library authority must take the problems as pointed out by the survey findings by the respondents, seriously and try to solve these problems by making adequate reading materials available and placed them at right place so that library users may get their desired reading materials in time. At the same time awareness training for how to use the reading materials in less possible time should be organised in the library time to time to make the library users empowered to search their desired reading materials from the traditional printed resources and also e-resources from the World Wide Web.

❖ Conducing Users Study: In order to know the requirements of the various categories of the library users, the academic / university library should conduct user survey / user study and take the feedback of the end users frequently for improving the library services time to time.

❖ Organized User Awareness Programme: The survey finding indicates that very good number of library users is encouraged by the Assam University Library to attend ICT training programme. Still some of them have not yet to attend such training programme. It is therefore suggested that in order to make all the Assam University Library users computer/ Internet savvy, a comprehensive training programme should be organised by the university authority on regular intervals to make them aware about the usage of ICT and Internet. For this UGC and INFLIBNET are trying to develop very good ICT infrastructure in the colleges and university campus. The faculty members' research scholars and students should come forward to learn modern ICT skills for the optimum utilization of electronic resources available through UGC-INFONET E-Journals and Digital Library Consortium over the Internet.

❖ For the full utilization of the facility of access to e-journals / on-line databases, the ICT/ Internet awareness programme should be organised time to time by the university/ colleges and also by the INFLIBNET Centre in order to give up-to-date information pertaining to application of ICT and Internet usage for the access to the latest publications of e-journals/ databases available under UGC-INFONET E-journals/ Digital Library Consortium and motivate the faculty members research scholars, students to use the e-journals facility for their academic and research activities.

❖ For that purpose, INFLIBNET has been organising IRTPLA and One day/ Two Days Users Awareness Programme for accessing to e-journals and other databases available under UGC-INFONET E-journals and Digital Library

Consortium. Therefore Universities/ Institutions should take necessary steps to arrange such types of awareness programme in collaboration with INFLIBNET Centre, Ahmedabad for Information Technology application Internet Awareness for the students, research scholars, teachers and staff and they should be encouraged to participate actively in these activities. If proper training is imparted and conducive environment and good ICT infrastructural facility is provided to the faculty members, research scholars, students and staff to search their desired scholarly e-journals and databases sites, frequency of E-mail/ Internet access will be definitely increased.

❖ Pro-active Role of Library Professionals: All these strategies as listed above are adopted by the library users at one or another time to get desired information in less possible time. Here the library staff should play a pro-active role in helping the students by organising reading materials properly by adopting various techniques of advertisement and display. The library authority should keep the latest arrivals on display for one month and list of additions for books and journals, CDs/ DVDs and bibliography / Webliography of Internet resources should be listed, displayed on Notice Board and also these lists should be sent to all Departments for wide circulation amongst the students, scholars and teachers/ staff. .

❖ Develop State-of –the Art ICT Infrastructure at University: University Library and Computer Centre is right place to access to e-resources available under UGC-INFONET Programme. It is therefore suggested that in order to attract the potential Internet users from the faculty members and scholars, the university libraries and computer centers should develop excellent ICT

infrastructure with all facilities for the optimum utilization of e-resources available in the universities and colleges under the UGC-INFONET Digital Library and E-journals Consortium Programme under INFLIBNET Centre. So University Library should arrange Internet Users Training Programme / E- Journals Awareness Programme with the help of INFLIBNET Centre and other agencies, which are interested to conduct such training programme in the universities/ institutions of higher learning for optimum utilization of e-resources.

## **7. Conclusion**

In view of the above interesting findings pertaining to ICT / Internet Literacy for accessing to the e-resources by the Assam University Library Users, it is concluded that there is still urgent need of developing adequate ICT infrastructure in the colleges and universities of India and also it is necessary for the faculty members, research scholars and students to undergo the ICT awareness training which have been organizing by the various agencies like ICSSR, UGC-Academic Staff Colleges, INFLIBNET Centres, many professional organisations/ societies, colleges/ university libraries and computer centers.

The Library users of various universities and institutions located in North Eastern Region should utilize the facilities of scholarly e-journals and on-line databases available under UGC-INFONET E-Journals and Digital Library Consortium/ and other Consortia like INDEST for academic and research activities. It may be concluded that it is Information Communication Technologies (ICTs)/ Internet, which makes our life faster and comfortable, if it is used properly for the benefit of the self in particular and for the society in general.

## 8. Acknowledgements

The author is thankful to Prof. Tapodhir Bhattacharjee, Hon'ble Vice-Chancellor for his constant encouragement and support. Thanks are also due to Prof. G.D. Sharma , PVC( STM) for critical and valuable suggestions while finalising the paper. Thanks are also due to all the respondents for returning filled –in questionnaire instantly .

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