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Evaluation of Virtual Reference Service Provided by IIT Libraries: A Survey

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ABSTRACT

The paper highlights on virtual reference service (VRS) in academic libraries. It is a new face of reference which is known as virtual reference rendering through online that enables library patrons to ask reference questions through a library's website. It gives greater opportunities to user, who can access services at home, in office, at school, or in a library. Investigative survey method has been applied into the state of VRS in the libraries of IIT's in India. The study reveals that a remarkable advancement in the electronic access to information has been achieved in these libraries.

Keywords: Reference service, virtual reference service, IIT, academic libraries, India

1. INTRODUCTION

Libraries and Information services have long been engaged in providing reference services to their users. Internet and digital libraries have changed significantly the nature of reference services. A number of digital reference services (DRS) are now available from library and non-library organisations[1]. DRS can be divided according to the type of technology used[2], because of its ease of use and universality.

In the fast changing technological era, with the advent of internet as powerful medium to provide the information round the clock, i.e., 24*7. The internet with its services like e-mail, www, bulletin board services have changed the notion of traditional library into virtual library and the traditional services are now called information services[3] to meet the quick demand of the user, librarians maintain virtual collection and also access e-resources and provide information in virtual mode. With the emergence of virtual library and influence of internet, the concept of traditional reference service has transformed into Virtual Reference Service (VRS).

It has been observed that many large and modern libraries in India as well as outside India have a general reference desk, full time reference librarians with subject specialists and off desk responsibilities[4]. This type of an environment need to be cultivated in academic libraries, especially in Indian Institutes of Technology (IIT libraries) where the thrust is on imparting education and pursuing research and consultancy. Thus, with the advancement of changing technology, the mode of providing reference service in the academic libraries is gradually changing. It is now presented to the user in a new and more developed form that is 'Virtual Reference Service', which is otherwise known as 'Digital Reference Service'.

1.1 Virtual Reference Service (VRS)

The VRS is also an internet based reference service where a user can ask a question online where the user and the librarian communicate in real time[5]. It uses computers and communication technology to provide reference service to users anytime and anywhere.

The VRS is defined as the provision of real-time personal assistance to patrons via web- based interactive software. To meet the user at his or her 'point of need' and to satisfy the patron's information need, the librarian can use a 'Chat' component of the software to answer a fairly specific or simple question, possibly deliver slideshows, 'push' web sources to the patron, and provide online bibliographic instruction[6]. The 'point of need' may happen when the library is closed, or when the user is unable to get to the library. This way, users can still be in contact with experienced reference librarians.

1.2 Benefits of VRS

Admittedly, the lack of time and physical cues can be considered drawbacks of virtual reference.

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However, it does provide benefits that other forms of reference lack:

- Reaches users in and out of libraries/social inclusion;
- Invites new users into the library;
- Provides better remote service for users-real information need;
- Adds online learning component-can walk users through finding the information themselves, as in face to face service;
- Supports real-time immediate assistance, immediate gratification;
- Extend library service hours;
- Prepare student/user for making better use of physical repositories/archives, by confirming material, sending out finding aids, rules, regulations in advance; and
- Takes the library to the users.

1.3 Elements of VRS

VRS incorporates the following basic elements:

(a) The user

(b) The interface (web form; e-mail; chat; video, etc.)

(d) Electronic resources (including electronic or CD –based resources; web resources; local digitised material, etc.) as well as print resources

(e) The information professional

1.4 Modes of VRS

The VRS models can be broadly divided in to three categories. The Figure 1 exhibits the various types of VRS currently in practice[7].

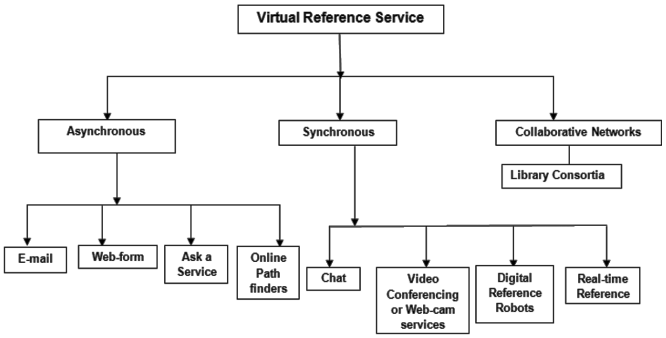

Figure 1. Modes of virtual reference service.

1.4.1 Asynchronous Transaction

The Asynchronous transaction involves a time delay between the question and answer[8]. Following are the examples of asynchronous transaction:

- E-mail based,
- Web-form or Ask a service,
- Virtual Reference Desk (VRD) service,
- Question Point,
- Online Pathfinders, etc.

1.4.2 Synchronous Transactions

The synchronous transaction, on the other hand takes place in 'real time' with an immediate response to the query[9], The examples of synchronous transaction are:

- Chat-based services,
- Video Conferencing or web-cam services,
- Digital Reference Robots,
- Real-time reference services (Live Ref, 24/7 Ref), etc.

1.4.3 Collaborative Networks

Many libraries and organisations have recognised the benefits of providing DRS through collaborative services. Some regional library consortia are offering member libraries the opportunity to share reference questions with each other using the internet and other technologies. The collaborative Digital Reference Service (CDRS)[10], operated by the library of congress, is an international network of libraries, consortia, museums, Ask a services that uses a help desk system to route questions to appropriate institutions based on member profile.

2. OBJECTIVES

The objectives of the present study are to:

(a) Uncover the present status of VRS being provided in IIT libraries; and

(b) Conduct users study of VRS provided by IIT libraries in India.

3. METHODOLOGY

The present study is based on investigation and survey method. (a) IIT Libraries in India are selected for the study. (b) checklist/questionnaire method was used for collecting the pertinent data. The scheduled questionnaires were sent to IIT libraries in India. All together, 220 questionnaires were circulated to these Institutional users. Out of which 172 responses were received which constitutes 78.18 % in total.

4. DATA ANALYSIS

The analysis of data is basically based on the research activities carried out through structured questionnaires covering different areas and most of the respondents belong to various levels. The data is analysed in view to the objectives mentioned in the study as follows: The user's study has been conducted in IIT libraries in India. Total 11 IIT libraries in India were identified

for the users study.

4.1 Purpose of Access of Internet

An attempt has been made to know the purpose for the access of internet by the users. Table 1 reveals that maximum number of the users 86.04 % accessing internet for education purpose includes academic activities, career development, and limited high-quality self discovery activities. 80.81 % users accessing internet for communication includes e-mail, voice mail, texting, instant messaging.

4.2 Opinion regarding use of Computer Literacy

Table 2 represents that 41.86 % users agree about computer literacy implies that their ability to retrieve e-resources from the computers and put to effective use is reduced. 71 (41.27 %) users strongly agree that computer literacy is important in the usage of electronic resources/ services because electronic resources are increasingly available on the internet or websites of the particular institutes thereby making it possible for students to access and use current and relevant literature for studies and research. 22 (12.79 %) users somewhat agree for computer literacy is importance in the usage of electronic resources/ services and there are 7 (4.06 %) users who disagree for the same.

4.3 Awareness of Library Website

A library website: provide a compelling user experience, effectively publish and provide access to content, promote library online and offline services and increase community engagement. Table 3 found that 133 (77.32 %) users are aware for their institutional library websites because website provides ready access library news, information, tools and services. only 39 (22.67 %) users are not aware about institution library website.

4.4 Awareness about Library Offering VRS

Table 4 represents that, 137 (79.65 %) users are aware about their institutions library offering VRS and only 35 (20.34 %) users are not aware about the institutions library offering VRS.

4.5 Usability of VRS

Table 5 shows that, VRS is easy to use because, 44.52 % was observed that is highest for all other options. 44 (32.11 %) users rate that very easy usability of the VRS, 23 (16.78 %) users rate that somewhat easy usability of the VRS, 8 (5.83 %) users rate that difficult usability of VRS, 1(0.72 %) users rate that very difficult to VRS.

4.6 Sufficiency of Information Literacy Programme

Information Literacy Program's mission is to provide opportunities for introducing users to the facilities, organisation, resources, and services of the library. The primary mission to ensure students develops information literacy skills, attitudes, and knowledge to become efficient and effective users and producers of information. Table 6 shows that most of the users agree that library offer sufficient information literacy programme, 36 (26.27 %) users somewhat agree that library offer sufficient information literacy skills programme, 33 (24.08 %) users strongly agree and 20 (14.59 %) users disagree that library offer sufficient information literacy programme.

4.7 Satisfaction of VRS

Table 7 represents that overall satisfaction of VRS provided by the IIT libraries in India. There

Table 1. Purpose of accessing the internet

S. No.	Name of institute	Total no. of users	Main purpose of accessing the internet					
			Communication	Education	Viewing current news	Business	Entertainment	Research
1.	IIT, KGP	15	13 (86.66 %)	12 (80 %)	9 (60%)	7 (46.66 %)	11 (73.33 %)	10 (66.66 %)
2.	IIT, B	17	11 (64.70 %)	15 (88.23 %)	13 (76.47 %)	9 (52.94 %)	13 (76.47 %)	12 (70.58 %)
3.	IIT, M	16	12 (75 %)	14 (87.50 %)	10 (62.50 %)	7 (43.75 %)	13 (81.25 %)	11 (68.75 %)
4.	IIT, D	15	10 (66.66 %)	13 (86.66 %)	9 (60 %)	8 (53.33 %)	13 (86.66 %)	12 (80 %)
5.	IIT, RPR	14	13 (92.85 %)	13 (92.85 %)	11 (78.57 %)	9 (64.28 %)	11 (78.57 %)	11 (78.57 %)
6.	IIT, H	16	13 (81.25 %)	11 (68.75 %)	8 (50 %)	7 (43.75 %)	12 (75 %)	11 (68.75 %)
7.	IIT, P	15	11 (73.33 %)	13 (86.66 %)	12 (80 %)	6 (40 %)	11 (73.33 %)	14 (93.33 %)
8.	IIT, J	15	13 (86.66 %)	12 (80 %)	11 (73.33 %)	9 (60 %)	11 (73.33 %)	9 (60 %)
9.	IIT, MND	16	14 (87.50 %)	14 (87.50 %)	11 (68.75 %)	10 (%)	13 (81.25 %)	14 (87.50 %)
10.	IIT, I	16	14 (87.50 %)	15 (93.75 %)	13 (81.25 %)	10 (62.50 %)	13 (81.25 %)	14 (87.50 %)
11.	IIT, BHU	17	15 (88.23 %)	16 (94.11 %)	14 (82.35 %)	11 (64.70 %)	14 (82.35 %)	15 (88.23 %)
Total (%)		**172 (100)**	**139 (80.81)**	**148 (86.04)**	**121 (70.34)**	**93 (54.06)**	**135 (78.48)**	**133 (77.32)**

Table 2. Computer literacy in the using of e-resources/services

S. No.	Name of the institute	Total no. of students	User opinion about electronic resources/services				
			Strongly agree	Agree	Somewhat agree	Disagree	Strongly disagree
1.	IIT, KGP	15	9 (60 %)	4 (26.66 %)	1 (6.66 %)	1 (6.66 %)	-
2.	IIT, B	17	9 (52.94 %)	5 (29.41 %)	3 (17.64 %)	-	-
3.	IIT, M	16	7 (43.75 %)	6 (37.50 %)	2 (12.50 %)	1 (6.25 %)	-
4.	IIT, D	15	6 (40 %)	6 (40 %)	3 (20 %)	-	-
5.	IIT, RPR	14	5 (35.71 %)	4 (28.57 %)	2 (14.28 %)	3 (21.42 %)	-
6.	IIT, H	16	5 (31.25 %)	8 (50 %)	2 (12.50 %)	1 (6.25 %)	-
7.	IIT, P	15	4 (26.66 %)	7 (46.66 %)	3 (20 %)	1 (6.66 %)	-
8.	IIT, J	15	8 (53.33 %)	4 (26.66 %)	3 (20 %)	-	-
9.	IIT, MND	16	7 (43.75%)	8 (50%)	1 (6.25%)	-	-
10.	IIT, I	16	6 (37.50%)	9 (56.25%)	1 (6.25%)	-	-
11.	IIT, BHU	17	5 (29.41%)	11 (64.70%)	1 (5.88%)	-	-
Total (%)		**172 (100)**	**71(41.27)**	**72 (41.86)**	**22 (12.79)**	**7 (4.09)**	**-**

Table 3. Awareness of library website

S. No.	Name of institute	Awareness of library website		Students
		Yes	No	
1.	IIT, KGP	11 (73.33 %)	4 (26.66 %)	15
2.	IIT, B	14 (82.35 %)	3 (17.64 %)	17
3.	IIT, M	13 (81.25 %)	3 (18.75 %)	16
4.	IIT, D	12 (80 %)	3 (20 %)	15
5.	IIT, RPR	11 (78.57 %)	3 (21.42 %)	14
6.	IIT, H	13 (81.25 %)	3 (18.75 %)	16
7.	IIT, P	11 (73.33 %)	4 (26.66 %)	15
8.	IIT, J	12 (80 %)	3 (20 %)	15
9.	IIT, MND	12 (75 %)	4 (25 %)	16
10.	IIT, I	12 (75 %)	4 (25 %)	16
11.	IIT, BHU	12 (70.58 %)	5 (29.41 %)	17
Total (%)		**133 (77.32)**	**39 (22.67)**	**172 (100)**

Table 4. Users awareness about VRS

S. No.	Name of Institutes	Library offering VRS		Total
		Yes	No	
1.	IIT, KGP	10 (66.66 %)	5 (33.33 %)	15
2.	IIT, B	14 (82.35 %)	3 (17.64 %)	17
3.	IIT, M	14 (87.50 %)	2 (12.50 %)	16
4.	IIT, D	11 (73.33 %)	4 (26.66 %)	15
5.	IIT, RPR	11 (78.57 %)	3 (21.42 %)	14
6.	IIT, H	14 (87.50 %)	2 (12.50 %)	16
7.	IIT, P	12 (80 %)	3 (20 %)	15
8.	IIT, J	12 (80 %)	3 (20 %)	15
9.	IIT, MND	13 (81.25 %)	3 (18.75 %)	16
10.	IIT, I	12 (75 %)	4 (25 %)	16
11.	IIT, BHU	14 (82.35 %)	3 (17.64 %)	17
Total (%)		**137 (79.65)**	**35 (20.34)**	**172 (100)**

are 52 (37.95 %) users satisfied with VRS provide their library, 40 (29.19 %) users are very satisfied with VRS provideded in their by the library, 33 (24.08 %) users somewhat satisfied with VRS provided their library and only 12 (8.75 %) users were unsatisfied.

5. FINDINGS

It is observed from the study, that 86.04 % users are accessing internet for their education purpose includes academic activities, career development, and limited high-quality self discovery activities. Following observations have been found:

- Most of the library users agreed that computer literacy is importance whenever using e-resources, about their institutions library websites, as well as, about their institutions library offering VRS.
- Most of the IIT libraries' users rated that it is easy to use of the VRS.
- 48 (35.05 %) user 'agreed' and 36 (26.27 %) 'somewhat agree' that library offer sufficient information literacy skills programme.
- 52 (37.95 %) users satisfied and 40 (29.19 %) users very satisfied with VRS provided by the library, 33 (24.08 %) users 'somewhat satisfied' and 12 (8.75 %) were unsatisfied.

6. CONCLUSIONS

Reference service initiated electronically often in real-time, where patrons employ computers or other internet technology to communicate with reference staff, without being physically present. VRS are increasingly incorporating instruction because of the growing need to teach patrons how to use the exploding electronic resources in libraries. Virtual reference is here to stay. As new technologies are

Table 5. Ease of use of the VRS

S. No.	Name of institute	Total no. of students use VRS	Rate the usability of the VRS				
			Very easy	Easy	Somewhat easy	Difficult	Very difficult
1.	IIT, KGP	10	3 (30 %)	4 (40 %)	2 (20 %)	1 (10 %)	-
2.	IIT, B	14	6 (42.85 %)	6 (42.85 %)	2 (14.28 %)	-	-
3.	IIT, M	14	3 (21.42 %)	7 (50 %)	3 (21.42 %)	1 (7.14 %)	-
4.	IIT, D	11	2 (18.18 %)	6 (54.54 %)	2 (14.28 %)	1 (9.09 %)	-
5.	IIT, RPR	11	4 (36.36 %)	6 (54.54 %)	1 (9.09 %)	-	-
6.	IIT, H	14	5 (35.71 %)	6 (42.85 %)	2 (14.28 %)	1 (7.14 %)	-
7.	IIT, P	12	3 (25 %)	5 (41.66 %)	2 (16.66 %)	1 (8.33 %)	1 (8.33 %)
8.	IIT, J	12	4 (33.33 %)	6 (50 %)	2 (16.66 %)	-	-
9.	IIT, MND	13	5 (38.46 %)	5 (38.46 %)	2 (15.38 %)	1 (7.69 %)	-
10.	IIT, I	12	4 (33.33 %)	4 (33.33 %)	3 (25 %)	1 (8.33 %)	-
11.	IIT, BHU	14	5 (35.71 %)	6 (42.85 %)	2 (14.28 %)	1 (7.14 %)	-
Total (%)		**137 (100)**	**44 (32.11)**	**61 (44.52)**	**23 (16.78)**	**8 (5.83)**	**1 (0.72)**

Table 6. Information literacy training programmes to use e-resources

S. No.	Name of institute	Total students	Users opinion about library sufficient information literacy programme			
			Strongly agree	Agree	Somewhat agree	Disagree
1.	IIT, KGP	10	2 (20 %)	4 (40%)	2 (20 %)	2 (20 %)
2.	IIT, B	14	3 (21.42 %)	5 (35.71 %)	4 (28.57 %)	2 (14.28 %)
3.	IIT, M	14	4 (28.57 %)	5 (35.71 %)	3 (21.42 %)	2 (14.28 %)
4.	IIT, D	11	3 (27.27 %)	3 (27.27 %)	3 (27.27 %)	2 (18.18 %)
5.	IIT, RPR	11	3 (27.27 %)	3 (27.27 %)	4 (36.36 %)	1 (9.09 %)
6.	IIT, H	14	3 (21.42 %)	5 (35.71 %)	4 (28.57 %)	2 (14.28 %)
7.	IIT, P	12	2 (16.66 %)	4 (33.33 %)	4 (33.33 %)	2 (16.66 %)
8.	IIT, J	12	2 (16.66 %)	5 (41.66 %)	3 (25 %)	2 (16.66 %)
9.	IIT, MND	13	3 (23.07 %)	4 (30.76 %)	3 (23.07 %)	3 (23.07 %)
10.	IIT, I	12	4 (33.33 %)	4 (33.33 %)	3 (25 %)	1 (8.33 %)
11.	IIT, BHU	14	4 (28.57 %)	6 (42.85 %)	3 (21.42 %)	1 (7.14 %)
Total (%)		**137 (100)**	**33 (24.08)**	**48 (35.03)**	**36 (26.27)**	**20 (14.59)**

Table 7. Overall satisfaction of VRS provided by the libraries

S. No.	Name of institute	Total students	Overall satisfaction with VRS provided by libraries			
			Very satisfied	Satisfied	Somewhat satisfied	Unsatisfied
1.	IIT, KGP	10	3 (30 %)	4 (40 %)	2 (20 %)	1 (10 %)
2.	IIT, B	14	5 (35.71 %)	4 (28.57 %)	3 (21.42 %)	2 (14.28 %)
3.	IIT, M	14	4 (28.57 %)	6 (42.85 %)	3 (21.42 %)	1 (7.14 %)
4.	IIT, D	11	3 (27.27 %)	4 (36.36 %)	3 (27.27 %)	1 (9.09 %)
5.	IIT, RPR	11	4 (36.36 %)	4 (36.36 %)	2 (18.18 %)	1 (9.09 %)
6.	IIT, H	14	5 (35.71 %)	6 (42.85 %)	3 (21.42 %)	-
7.	IIT, P	12	4 (33.33 %)	5 (41.66 %)	2 (16.66 %)	1 (8.33 %)
8.	IIT, J	12	3 (25 %)	5 (41.66 %)	3 (25 %)	1 (8.33 %)
9.	IIT, MND	13	3 (23.07 %)	4 (30.76 %)	4 (30.76 %)	2 (15.38 %)
10.	IIT, I	12	2 (16.66 %)	5 (41.66 %)	4 (33.33 %)	1 (8.33 %)
11.	IIT, BHU	14	4 (28.57 %)	5 (35.71 %)	4 (28.57 %)	1 (7.14 %)
Total (%)		**137 (100)**	**40 (29.19)**	**52 (37.95)**	**33 (24.08)**	**12 (8.75)**

developed the ways in which virtual reference is provided will continue to evolve. This study is an important first step towards better understanding how virtual library services can be successfully integrated into existing library and information services.

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