

A Study on Information Storage and Access in the Digital Environment for People with Disabilities, With Special References to University Libraries of Tamil Nadu

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ABSTRACT

Libraries are crucial for every community, and incorporating individuals with disabilities is crucial for them. A study was conducted at Bharathidasan University in Tiruchirappalli using a well-designed interview questionnaire to gather insights from individuals with disabilities regarding the accessibility and management of information in the university library's digital resources. The researcher chose 100 participants through purposive sampling and conducted interviews to collect the necessary data.

Keywords: Bharathidasan University library, Information dissemination, Disabled people, Digital Environment

1. INTRODUCTION

The library is built to serve a particular community where it provides numerous resources that one can borrow or refer. There are books, periodicals, pamphlets, newspapers, films, maps, documents, CDs, cassettes, video tapes, video games, e-books, audio books among many other such commodities. Besides, the academic libraries offer digital tools and information that allow users to access full-text articles, complete journals, indexes, and online content electronically. In order to ensure quick access of information on demand libraries are turning into electronic environments in which they operate and carry out activities using fast comprehensive interactive and integrated services. Information and Communication Technology (ICT) offers the means for distributing vital information in today's world. Yet, many people especially those with impairments or lack of equipment find it difficult to access information services thereby hindering their inclusion into this service. This is one of the largest disability issues in terms of access to digital information services offered by libraries. In addressing this challenge, it is important that we thoroughly examine the accessibility of information needs and utilization patterns among individuals with disabilities. It would help libraries serve all its patrons better including disabled ones if they understood this. It is important that library managers and staff be given training in order to improve their understanding of disabilities and how to assist users depending on the level of disability. Libraries today are concerned with the provision of digital information services to disabled people. Emphasis on offline content such as Braille books for blind individuals is now outmoded. Disabled persons represent a diverse demographic group and are key members of any library community regardless of where it is located. Librarians enabling professionals must strive for equitable services towards this group, just as they do for those who are more physically or mentally capable.

Disability under the World Health Organization (WHO):

According to the World Health Organization, disability is a comprehensive notion which includes participation restrictions, impairments and activity limitations. Impairment is about difficulties in body

function or structure whereas activity limitation involves the challenges that people may experience when carrying out specific tasks. Furthermore, participation restriction means the barriers that individuals face while living in different circumstances of their life. Essentially, disability arises from the way a person's immediate environment interacts with his/her physical self.

2. PROFILE OF SAMPLE UNIT:

Bharathidasan University was established as an affiliated university during February 1982 under the Tamil Nadu Government Act. In 1985, the University Grants Commission granted the university its recognition. This institution is named Bharathidasan University in reverence to the great Tamil poet Bharathidasan {1891-1968}. His inspiring words "We will forge a glorious new world" are part of his lyrics. The university encompasses more than 193 affiliated colleges, including 21 constituent colleges, aided arts and science colleges, education colleges, fine arts colleges, and government and science colleges. Another one is a university faculty institution, and there are colleges of education, approved institutions, and self-financing arts and science colleges. The jurisdiction of the University extends over 13 Approved Institutions, 104 Arts & Science and Fine Arts Colleges, and 7 Districts. Of the participating Colleges, eighteen are autonomous. Over 50% of the colleges offer postgraduate degrees and 25% offer M.Phil./Ph.D. programs. Many such universities are nationally acknowledged for their excellence in terms of education. All put together, the number runs into well over 100 different programs through the affiliated colleges.

Apart from the main campus, it has a city campus in Khajamalai, which accommodates the Department of Economics, Department of Education, Technology, and Computer Science, the Institute for Entrepreneurship and Career Development, and Bharathidasan University Technology Park. The Bharathidasan Campus in the UAE is managed by the International English Institute for Language Studies with its registered office located on Al Ain Main Street. The Bharathidasan Institute of Management is situated on the B.H.E.L. Campus and its name has gained recognition as one of the best business schools in the country just because it shares a campus associated with B.H.E.L.

3. REVIEW OF LITERATURE:

McNaught (2014) The paper analysed different organizations that advocate for and advice people with disabilities including Jisc Tech which is developing support for students with disabilities. This article stressed the kind of services libraries should provide to students with disability, it also underscored the importance of having electronic books or e-book platforms and technology as an enabler of accessible library services. Moreover, improving accessibility in libraries was highlighted by this author.

O'Dekk, Kathleen (2015) Disabled Adult Story time is a program which was introduced in 2013 during monthly programming sessions for adults with developmental disabilities at the Springfield-Greene County Library, Missouri. The initiative aimed to give individualized support and was facilitated by Tysha Shay and Eva Pelkey, in conjunction with Arc of the Ozarks, an NPO. Additionally, Community Connections Day Program of the library run by Brittany Keehner tailored to individuals having sensory issues, Down syndrome or Autism.

Shapiro et al. (2015) In a research paper, various effects of a short computer-based training course were studied on the perception of environmental sounds and speech by adults with cochlear implants. In comparison to speech tests, the mean scores for identifying environmental sounds were relatively lower. Environmental sound perception rose after training by 15.8 points on average and this was sustained for one week only. No significant improvements occurred in either of the two speech tests. Thus, these findings suggest that computerized interventions may be useful in augmenting home-related environmental sound interpretation which remains difficult even among experienced cochlear implant patients. This kind of training via a computer might be an option for rehabilitation providing solutions that are both effective as well as cheaply affordable to individuals with hearing problems who use cochlear implants and perhaps other forms of deafness as well.

Grassi and Renee (2017) Advise developing a strategy to cater to disabled individuals. This encompasses establishing clear objectives towards enhancing the backing of this group, continuously educating library personnel on identification and aid provision for disabled patrons, and evaluating the local community surrounding the library in order to establish current services available to people with disabilities.

4. STATEMENT OF PROBLEM:

Regardless of their ailments, it is paramount that all patrons receive equitable services at the library. Disability discrimination is forbidden by the Disability Services for Libraries Policy; yet all resources

are still accessible in this realm. Therefore, support should be extended to learners grappling with disabilities so they do not lag behind— although such students might need information on the facilities and services available at the library which could dissuade their use. It is upon the library staff to take the lead and ensure that students with disabilities are informed about all reachable resources within the library system designed for them. The major role of an academic library system in terms of education provision cannot be underestimated. Good quality and easily accessible knowledge should be availed by it through various means including exceptional services offered to students. Regrettably though, disability among persons especially students continues to marginalize them reducing their contact with many facilities especially those in Tamil Nadu university libraries. A study aims at investigating the level of access students who are visually impaired, hearing impaired, speech impaired or have learning impairments or mobility problems who attend government and government-aided arts and science colleges have affiliated with Bharathidasan University, Tiruchirappalli have to library resources as well as software and hardware needed for them to improve their skills.

5. OBJECTIVES OF THE STUDY:

- ✓ To ascertain the diverse information needs and requirements of individuals with disabilities.
- ✓ To study the type of library collections available for people with disabilities.

6. NULL AND ALTERNATIVE HYPOTHESES:

H0: There is no significant relationship between the profile of respondents and their attitude towards the resources available at the Bharathidasan University library..

H1: There is a significant relationship between the profile of respondents and their attitude towards the resources available at the Bharathidasan University library.

7. SCOPE OF THE STUDY:

There are certain limitations in the research because it is only centered on Bharathidasan University, Tiruchirappalli. The investigation involves only people who are visually blind or impaired, audibly deaf or hard of hearing, and physically locomotor-impaired. However, those with mental retardation or mental illness are excluded from the study. Moreover, the count of users surveyed at each library is restricted to 100 due to the users' availability at that time.

8. METHODOLOGY:

The study area is the Tiruchirappalli District. An interview schedule was prepared with the objectives of the study in view. The researcher undertook an interview with disabled persons to gather more information about the opportunities existing regarding information storage and access in the digital environment for Bharathidasan University library resources. The researcher used purposive sampling to select the sample and gather data from 100 individuals.

9. LIMITATIONS:

- ✓ The respondents are selected using a non-probability sampling technique.
- ✓ The study's accuracy hinges upon the integrity of the responses obtained from the participants.

10. ANALYZING AND INTERPRETING DATA:

Table 1: Segmentation of Respondents Based on Disability

Sl. No	Type of Disability	Number of Respondents	Percentage
1	Visually Impaired (Low Vision)	18	18
2	Hearing Impaired	16	16
3	Speech Impairment	20	20
4	Learning Disability	11	11
5	Locomotor impairment	35	35
Total		100	100

The information in Table 1 illustrates the distribution of the selected participants according to their disabilities. The data indicates that 35% of the participants have a locomotor impairment, 20% have speech impairment, and 18% have Visually Impaired. Moreover, 16% of the participants have a hearing impairment, while only 8.8% have a learning disability.

Table 2: Regularity of Library Visits

Sl. No	Frequency	Number of Respondents
1	Almost daily	38
2	Thrice a week	16
3	Twice a week	17
4	Once a week	13
5	Occasionally	16
Total		100

(Source: Primary Data)

As per Table 2, the chosen participants were categorised according to how often they visited the university library. The information indicates that 38% of students utilise the library every day, whereas 16% visit three times a week, 17% visit twice a week, 13% visit once a week,. Remarkably, 38% of respondents reported visiting the library every day.

Table 3: Types of Information Sources Used

Sl. No	Types of Information Sources Used	Number of Respondents	Percentage(%)
1	Books	38	38
2	Journals	21	21
3	Newspapers	13	13
4	Reports	15	15
5	E-Resources	13	13
Total		100	100

(Source: Primary Data)

As per Table 3, respondents used different sources of information to find the information they needed. Most respondents, 38 %, used e-resources, with 13% opting for reports and 21% relying on journals. Additionally, 15% of participants used reference books, while 13% used newspapers to acquire the necessary information.

Table 4: Distance of Classroom to Library

Sl. No	Distance of Classroom to Library	Number of Respondents	Percentage
1	Very short distance	41	41
2	Short distance	23	23
3	Long distance	25	25
4	Very long distance	11	11
Total		100	100

Table 4 breaks down the participants based on their distance from the classroom to the library. The information indicates that 11% of the participants have a significantly long distance from the library, 25% have a long distance, and 23% have a short distance. Moreover, 41% of the participants have a short distance to the library.

Table 5: Hours Spent in the Library

Sl. No	Hours Spent in the Library	Number of Respondents	Percentage
1	Less than one hour	25	25.00
2	1 - 2 hours	36	36.00
3	2 – 3 hours	23	23.00
4	More than 3 hours	16	16.00
Total		100	100

Table 5 federates the duration of the visit that each participant spent at the library, as broken down above. According to the data, 36% of respondents spent 1-2 hours during their visit, 25.00% spent less than an hour, 22.00% spent 2-3 hours, and 16% spent more than 3 hours in the university library.

Table 6: Purpose of Visit to the University Library

Sl. No	Purpose of Visit to the University Library	No. of Respondents	Percentage
1	Borrowing books	78	78.00
2	Access Periodicals and Magazines	63	63.00
3	Reading Newspaper	67	67.00
4	Question bank	74	74.00
5	Access Online resources	95	95.00
6	Access CD/DVD Materials	70	70.00
7	Projects/Thesis/Assignments	55	55.00
8	Preparing for tests/exams	59	59.00
9	Developing Competence	71	71.00
10	Acquiring General knowledge	81	81.00

Based on Table 6, most survey participants (95.00%) utilise the university library to obtain online resources. Following this, 81.00% of respondents visit the library to acquire broader knowledge, and 78.00% visit to borrow or return books.

Table 7: Source of awareness about digitalised repositories of Library

Source of awareness	Response					Total	WAM	Rank
Friends Circle	27	33	21	10	09	100	3.542	IV
Social medias	10	13	31	28	18	100	3.769	I
Internal communication	33	12	19	13	23	100	3.311	VI
workshop/ Seminar on E-resources	22	13	23	17	25	100	3.395	V
Issuance of Posters and brochures	23	10	12	17	38	100	3.197	VIII
University website	27	19	21	15	18	100	3.592	III
Faculty board meetings	14	17	10	26	33	100	3.206	VII
Personal Interaction with Librarian	37	14	23	12	14	100	3.088	IX
Use of Library	14	21	17	19	29	100	3.710	II

The information in Table 7 indicates that survey participants learned about the library's digital resources through different channels, such as social media, the library, and the University website. The findings also imply that improving internal communication could boost awareness of these resources and that conducting workshops or seminars on using e-resources may effectively enhance awareness among participants.

Table 8: Respondents' opinions about the facilities in the Sample unit

Sl. No	Options	Gender		“F” value	Significance value
		Male	Female		
1	Scanner and Reader	3.534	3.306	1.0162	> 0.05 *
2	Braille Printer	3.534	3.053	1.1681	> 0.05*
3	Talking Books	3.534	3.022	1.1869	> 0.05*
4	Tactile graphics	3.534	2.422	1.5466	> 0.05*
5	Hearing loop	2.827	2.415	1.5509	> 0.05*
6	Frequency Modulation	3.534	2.981	5.8112	< 0.05 **
7	Personal amplifiers	2.827	2.247	1.6517	> 0.05*
8	Optical Character Recognition	3.534	2.647	4.4118	< 0.05 **
9	Assistive Software for the Visually impaired	3.414	2.210	1.6740	> 0.05*
10	Digital Accessible Information System	3.534	2.762	1.3427	> 0.05*
11	Zoom Text Magnifier / Reader	3.534	3.236	1.0162	> 0.05*
12	Kurzweil	3.534	3.251	1.1681	> 0.05*

** Significant at a 5 %

*Not significant at a 5 %

The "F" test outcomes, as depicted in Table 8, were utilised to determine any disparity in viewpoint among disabled participants regarding the services rendered by Bharathidasan University Library in Tiruchirappalli. Most of the variables in the table display an "F" value lower than the set threshold of three and an associated p-value exceeding 0.05 at a 95% confidence level. These results conclude that the null hypothesis cannot be dismissed, indicating that there isn't a significant difference in opinions between males and females, especially among disabled individuals, regarding the university library's services.

11. FINDINGS:

- ✓ The data reveals that 35% of the respondents have a locomotor impairment, 20% have speech impairment, and 18% have low vision. Additionally, 16% of the respondents have a hearing impairment, while only 11% have a learning disability.
- ✓ As it can be concluded from the data, three quarters of students visit the library daily; three quarters - three times a week, 17%- twice a week, 13%- once a week, and only nine percent of all the respondents visit the library rarely. The attention should be paid to the fact that 16% of the participants have admitted visiting the library at least once a day.
- ✓ Most respondents, 13%, used e-resources, followed by 21% who used reports and 15% who used journals. Moreover, 38% of the respondents used reference books, while only 10.40% used newspapers to find the needed information.
- ✓ It is observed that 11.00% of the respondents have a very long distance from the library, 25.00 %have a long distance, and 23.00 % have a short distance. Besides, 23.00 % of the respondents have a short distance to the library.
- ✓ The data shows that 36% of respondents spent 1-2 hours per visit, 25.00% spent less than an hour, 23.00% spent 2-3 hours, and 16% spent more than 3 hours in the university library during their visit.
- ✓ Most respondents (95.00%) visit the university library to access online resources. This is followed by 81.00% of respondents who visit the library to gain more general knowledge and 78.00% who visit to borrow or return books.
- ✓ Respondents discovered the electronic resources available at the library through various sources, including social media, the library itself, and the University website.

12. SUGGESTIONS:

- Frequency modulation facilities should be provided so deaf students can understand the information.
- Optical Character Recognition should be available to visually impaired students.
- "The distance between the classroom and the library where the student goes should be shortened."
- The study results also suggest that better internal communication may increase awareness of these resources and that workshop or seminars on utilising e-resources may effectively increase awareness among respondents.

13. CONCLUSION:

The digital era has repositioned libraries as the nucleus for all things information, especially for users grappling with physical limitations. Despite these challenges, users with disabilities are able to stay abreast of ICT advancements and Assistive Technology—tapping into these services that provide easier and quicker access to digital data. This research delves into the different information services and resources, such as ICT & Assistive Technology, that cater to individuals with disabilities in an electronic setting. It also scrutinizes the adjustments made by institutions/libraries for these users along with issues surrounding Web accessibility.

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