

Information Services for the Visually Challenged Students in India: A Case Study

S. Pradhan, N. Bhattacharyya Sahu*

Department of Library and Information Science, Vidyasagar University, Midnapore,
West Bengal, India

Abstract

The study looks into the information services available for the visually challenged students of secondary and higher secondary level in the blind schools in Burdwan division, i.e., one of the divisions among the five administrative divisions in the state of West Bengal in India. There are seven (07) such schools in the division spread over the districts. Semi-structured questionnaire with Likert-type questions have been prepared to collect data from the students. Also another semi structured questionnaire is prepared for the organization head or the librarian taking care of the information resources. Basically the students are interviewed to obtain their answers. Sample size is restricted to 10% of the total population of students. The study reveals that the institutes should increase access, availability and funding for assistive technology through efforts and initiatives. Only one institute Asansol Braille Academy (ABA) uses sufficient Braille resources and Assistive technology. Due to improper information about the assistance from the Government level (both Central and State) these institutes are suffering from shortage of funds. Shortage of teaching faculty is another hindrance in the overall development of the visually challenged students. Only in one institute, Asansol Braille Academy (ABA) trained librarians are recruited to run the library. Only in 6 institutes the visually challenged students are very much satisfied with at least one service of the library. The study gives a comparative analysis of the institutes and their services which aids in their betterment and overall services for the visually challenged.

Keywords: Visually challenged, Braille resources, assistive technology, Burdwan division, library and information services

*Author for Correspondence E-mail: nives.b22@gmail.com

INTRODUCTION

The fourth most populous state in eastern India, West Bengal has issued the West Bengal Persons with Disabilities Rules 1999 to implement the requirements under the Central Persons with Disabilities Act 1995. The state of West Bengal in India has a population of 91,276,115, spread over an area of about 88,752 sq. km. and literacy rate of 76.26%. The total differently able population is about 2,017,406 and visually challenged population is 4,24,473 among which 2,23,325 are males and 2,01,148 are females [1].

The Census of India 2011 shows that 6–7% of India's population is differently abled and it is estimated that this number will increase due to poverty, malnutrition, emergence of new diseases, drug abuse, road accidents, armed conflict, violence, poor health care and service, and other factors leading to disability.

It has been predicted by the World Bank in its report in 2007 that between 1990 and 2020, the number of disabled population due to injuries and accidents will be simply doubled, and more than 40% increase will be noticed due to non-communicable diseases. This compels us to think that India should have a comprehensive policy for differently abled people to ensure their access to higher education, which should be based on all-round approach to make them understand their full individual potential and make best use of their social and economic contribution to the society [2].

Visually challenged people are those who suffer from either of the following conditions:

- (a) Total absence of sight.
- (b) Visual acuity not exceeding 6/60 or 20/200 in the better eye with correcting lenses.

- (c) Limitation of the field of vision subtending an angle of 20 degree or worse [3].

The main causes of blindness are cataract, trachoma, AMD and glaucoma which account for more than 70% of the global blindness. Other causes of blindness are childhood blindness, onchocerciasis (river blindness), diabetes retinopathy, corneal opacities, ocular injuries, leprosy and visual loss [4].

Information service to the visually challenged is an essential factor in communication, intensification, expansion and advancement in the life of living creatures, especially human beings. Information service is an exchange of information about ideas, feelings, attitudes and beliefs between sender and receiver, information delivery has both audio and audio-visual dimension, that is to say one can actually communicate without visualizing [5].

REVIEW OF THE RELATED LITERATURES

International Literatures

Rosen speaks about a variety of enabling technologies which made library operations at the American Foundation for the Blind accessible to persons who are blind or visually impaired [6].

Anne Murtha highlights the various services that public libraries can offer to open up access to the blind and visually impaired [7].

Oppenheim and Karen look at how three search engines; AltaVista, Yahoo! and Info seek presented their information to a small group of visually impaired and blind users and how accessible individual Internet pages are. They opined that by using these visually challenged people would also have the same opportunity to access knowledge as their sighted colleagues [8].

Williamson, Schauder and Bow investigated information seeking by blind and sight impaired people, with particular emphasis on the role of the Internet and concluded that people with special needs must also have equal opportunities for satisfying their information needs as the healthy individuals [9].

Cookson and Rasmussen identified that the National Library Service (NLS) produces about 2,000 talking books and 50 magazines per year on specially formatted cassette tape for free distribution to a readership of about 764,000 visually challenged users [10].

Jiang and Zhu determined some key technologies to implement accessible information services and systems for visually impaired people [11].

Zia and Fatima identified the digital library services for visually impaired (VI) students, studying in the University of Karachi who have a keen interest in using digital information through digital libraries because they were aware of the importance and usefulness of digital information and wanted to get benefit of that in their education [12].

Lucky and Acheba suggested the information service delivery to the visually impaired and centered on meeting the reading needs of persons with visual impairment through various assistive technology devices [13].

Wanbin and Yanna investigated the information needs of visually impaired library users in China. They identified that the visually impaired users felt some barriers in their access to library services such as lack of time or a sighted companion who can come along for the trip to the library [14].

Indian Studies

Koganuramath and Choukimath enumerated the salient features, special services, special resources, assistive/adaptive technologies and futuristic plans of a state-of-the-art 'Learning Resource Centre for the Visually Impaired Students' to promote complete education [15].

Roy and Bandyopadhyay described the barrier free environment in university libraries with proper equipment, technologies and infrastructural facilities and need based services for the visually disabled [16, 17].

Mitra, Shukla and Sen highlighted the scenario of academic library services for the differently abled students being provided by some university libraries in India. They also

highlighted the special equipment, infrastructure and services that the libraries are expected to provide for the disabled pupil [2].

OBJECTIVES

The objectives of the study are:

- To depict the different centres which provide information services for the visually challenged students.
- To identify the existing collections, infrastructure and services offered by the centers for the visually challenged.
- To explore the utilization of Assistive Technologies by the visually challenged students.

IMPORTANCE

Information services to the general users and to that of the special users differ in their context. To serve the users with special needs like that of visually challenged users we need special type of information services. So this study which focuses mainly on the information services for the visually challenged students of Burdwan division in West Bengal, India will be important not only from services point of view but also will help to identify the information needs of these students which in turn will help to improve the information services for them.

SCOPE AND COVERAGE

The scope of this study focuses on the activities of all the Schools which function in the Burdwan division under the districts of Birbhum, Purba Bardhaman, Paschim Bardhaman and Hooghly for providing services to the visually challenged students of secondary and higher secondary level. The organizations in the above-mentioned districts have been surveyed to identify the information services provided by these institutions to the visually challenged students. The following schools provide services to these students [18, 19].

Birbhum District

1. Sri Sri Ramkrishna Satyananda Dristideep Sikshaniketan (SSRSDS), Rampurhat, Birbhum.
2. Sri Aurobindo Institute for Sightless (SAIS), Suri, Birbhum.

Purba Bardhaman District

1. Burdwan Blind Academy (School Section) (BBA), Sripally, Purba Bardhaman.
2. Nazrul Smriti Dristihin Vidyalaya (NSDV), Gangpur, Purba Bardhaman.

Paschim Bardhaman District

1. Asansol Braille Academy (ABA), Asansol, Paschim Bardhaman.

Hooghly District

1. Louis Braille Memorial School for the Sightless (LBMS), Makhla, Hooghly.
2. Jirat Astha Welfare Society (JIAWS), Jirat, Hooghly.

METHODOLOGY

The study is basically based on field survey in order to examine the trends of services with the existing conditions of institutions providing services for visually challenged students. Data has been collected by visiting the schools meant for visually challenged students in the above mentioned districts. All the seven schools meant for the visually challenged students (some of them also include other physically challenged and mentally retarded students) situated in these districts are surveyed. Questionnaire method, interview method and observation method has been used for data collection. Two sets of questionnaire have been prepared to obtain the data. One set is meant for the organization to get an idea of the functioning and services provided by these organizations to the visually challenged students. The head of the institution is interviewed for getting answers to specific queries. The other set is meant for the students to get information on the services availed by them from these organizations. As these students are visually challenged so the questions were asked in the form of interview and kept unstructured for their opinion to be expressed freely.

Sample size has been restricted to 10% of the total population of students from these organizations. This 10% has been selected in some organizations according to the ranks obtained in their class examinations while in some other organizations where ranking system is not followed there the most active students are selected as sample. Likert-type questionnaire has been prepared to collect data

on their satisfaction from the library services. The researchers have personally interviewed the students to understand their information needs and thereby get an idea of their satisfaction levels from the information services. Therefore this research work will use multiple methods for collecting data.

FINDINGS

The study revealed that Burdwan is divided into Birbhum, Purba Bardhaman, Paschim Bardhaman and Hooghly districts. A total of seven institutes have been found from the Burdwan division where information services are provided for the visually challenged students. Four institutes are Government Sponsored Schools and three institutes are non-Govt. Sponsored schools in Burdwan division. These institutes are affiliated to Mass Education Extension Dept., Govt. of West Bengal; West Bengal Board of Secondary Education and West Bengal Council of Higher Secondary Education; and also affiliated to Commissioner for Persons with Disabilities and Society Registration Act, 1961, Govt. of West Bengal, India. The documents required for the admission are Disability certificates, Birth certificates, Residential certificates and some other documents like Aadhar card, Ration card and Voter Card of parents and Photo. No software is used in 5 institutes, 1 institute use Braille transcribes software and only Asansol Braille Academy used JAWS, DUXBURY, NVDA and SPARSHA software in Burdwan division.

Table 1: Sample Study.

Sl. No.	School/Institute	Total no. of Students	Sample size of students
1	SSRSDS	30	3
2	SAIS	54	5
3	BBA	38	4
4	NSDV	15	2
5	ABA	35	4
6	LBMSS	95	10
7	JIAWS	4	1
Total		271	29

ABA, Asansol Braille Academy, Asansol, Paschim Bardhaman; BBA, Burdwan Blind Academy (School Section), Sripally, Purba Bardhaman; JIAWS, Jirat Astha Welfare Society, Jirat, Hooghly; LBMSS, Louis Braille Memorial School for the Sightless, Makhla, Hooghly; NSDV, Nazrul Smriti Dristihin Vidyalaya, Gangpur, Purba Bardhaman; SAIS, Sri Aurobindo Institute for Sightless, Suri, Birbhum; SSRSDS, Sri Sri Ramkrishna Satyananda Dristideep Sikshaniketan, Rampurhat, Birbhum

The data was collected through physical survey conducted in the 7 institutes in Burdwan division following questionnaire method and general interview method for the organization head and general interview method and observation method for the visually impaired students. The institutional head is interviewed for getting answers to specific queries. Table 1 shows the total population of students to be 271 in Burdwan division. 10% students from each institute have been selected as sample. The sample size is therefore 29.

Table 2 highlights the Distribution of students' gender-wise, blindness type and reasons of blindness in the seven institutes. The sample is divided into three age groups i.e. 6 to 11 years, 12 to 17 years and 18 to 21 years. The male to female ratio is 21 and 8 students in Burdwan division. Students are either fully blind or partly blind. 19 students are fully blind and 10 students are partly blind in Burdwan division. The reasons for blindness are either from birth, or due to some accident or some diseases. 82.76% students are affected since birth, 17.24% students are affected by some diseases and no students are affected by accident in Burdwan division.

Table 2: Distribution of Students' Gender-wise, Blindness Type and Reasons of Blindness.

Age Groups		6-11 years	12-17 years	18-21 years	Total (%)
Sex	Male	5	12	4	21 (72.41%)
	Female	1	7	0	8 (27.59%)
Type of blindness	Fully blind	3	12	4	19 (65.52%)
	Partly blind	3	7	0	10 (34.48%)
Reasons of blindness	Birth	4	16	4	24 (82.76%)
	Accident	0	0	0	0
	Disease	2	33	0	5 (17.24%)

Table 3: Distribution of Students' Standard-wise According to Braille Training.

Educational standard	Training of Braille resources	
	Yes	No
Class I-IV	5 (17.24%)	5 (17.24%)
Class V-VIII	15 (51.73%)	0
Class IX-XII	4 (13.79%)	0
Total	24 (82.76%)	5 (17.24%)

Table 3 shows the distribution of visually challenged students according to training of Braille resources. Students are grouped into three educational standards i.e. Class I to IV, Class V to VIII and Class IX to XII. 82.76% students have Braille training in Burdwan division. It has been also identified that all the sample students from standard V onwards have Braille training. Only a small percentage of students (17.24%) in lower classes are not trained in Braille resources.

Table 4 highlights the library resources available in the seven institutions. It is found that in all the institutes Braille books are present. On the other hand two institutes in Burdwan division have Talking books in the library. Four institutes have Audio books and Assistive technology is also used in six institutes in Burdwan division. All types of information resources are available in Sri Sri Ramkrishna Satyananda Dristideep Sikshaniketan in Burdwan division.

Table 4: Library Resources Available for the Visually Challenged Students.

Sl. No.	Name of the Institutes	Library resources			
		Braille book	Talking book	Audio book	Assistive technology
1	SSRSDS	Yes	Yes	Yes	Yes
2	SAIS	Yes	No	Yes	Yes
3	BBA(S.S.)	Yes	No	Yes	Yes
4	NSDV	Yes	No	No	No
5	ABA	Yes	No	Yes	Yes
6	LBMSS	Yes	Yes	No	Yes
7	JIAWS	Yes	No	No	Yes

ABA, Asansol Braille Academy, Asansol, Paschim Bardhaman; BBA, Burdwan Blind Academy (School Section), Sripally, Purba Bardhaman; JIAWS, Jirat Astha Welfare Society, Jirat, Hooghly; LBMSS, Louis Braille Memorial School for the Sightless, Makhla, Hooghly; NSDV, Nazrul Smriti Dristihin Vidyalaya, Gangpur, Purba Bardhaman; SAIS, Sri Aurobindo Institute for Sightless, Suri, Birbhum; SSRSDS, Sri Sri Ramkrishna Satyananda Dristideep Sikshaniketan, Rampurhat, Birbhum

Table 5: Library Facilities Available for Visually Challenged Students.

Name of the Institute	Educational Standard	No of enrolled students	No. of Braille books	Total no. of books (Braille+ General printed books)	Type of resources	Software used
SSRSDS	Class I– Class VIII	30	~600	~1500	Braille book, Geometric kits, Braille slate, Tailor from and type, Tactile Board, Alphabet Board, Braille Board, Braille and Talking Books	Braille Transcribe software
SAIS	Class I– Class X	54	~1008	~1200	Braille book, Geometric kits, Braille slate, Braille cane, Tailor from and type, Tactile Board, Tactile map, Braille and Eye p	No
BBA(S.S.)	Class I– Class VIII	38	~400	~500	Braille book, Geometric kits, Braille slate, Braille cane, Tailor from and type, Tactile Board	No
NSDV	Class I– Class VI	15	~200	~250	Braille book, Geometric kits, Braille slate, Braille cane, Tailor from and type	No
ABA	Class I– Class VI	35	~700	~900	Braille book, Braille cane, Braille slate, Abacus, Taylor frame, Types Algebra, Types arithmetic, Stylus, Geometric Kits, Signature guide, Magnifier, Long cane, Tactile Diagram set, Measuring Tactile type,	NVDA, JAWS, DUXBURY, SPARSHA
LBMSS	Class I– Class X	95	~1200	~2000	Braille book, Geometric kits, Braille slate, Braille cane, Tailor from and type, Tactile Board, Tactile map, Braille, Magnifier, Talking book	No
JIAWS	Class I– Class VIII	4	~30	~150	Braille book, Geometric kits, Braille slate, Braille cane, Tailor from and type, Tactile Board, Abacus, Magnifier, Sound recorder, Large print books	No

ABA, Asansol Braille Academy, Asansol, Paschim Bardhaman; BBA, Burdwan Blind Academy (School Section), Sripally, Purba Bardhaman; JIAWS, Jirat Astha Welfare Society, Jirat, Hooghly; LBMSS, Louis Braille Memorial School for the Sightless, Makhla, Hooghly; NSDV, Nazrul Smriti Dristihin Vidyalaya, Gangpur, Purba Bardhaman; SAIS, Sri Aurobindo Institute for Sightless, Suri, Birbhum; SSRSDS, Sri Sri Ramkrishna Satyananda Dristideep Sikshaniketan, Rampurhat, Birbhum

Table 6: Use of Library Resources.

Sl. No.	Library resources	Total no. of Sample size	Usage of resources by students	% of usage
Burdwan Division				
1	Braille Slate and stylus	29	12	41.38
2	Braille Cane		20	68.97
3	Braille Books		27	93.10
4	Abacus		9	31.03
5	Taylor frame and type		18	62.07
6	Geometric kits		20	68.97
7	Tactile Board		16	55.17
8	Alphabet Board		14	48.28
9	Types of Algebra		11	37.93
10	Types of Arithmetic		11	37.93
11	Magnifiers		6	20.69
12	Signature Guide		15	51.72
13	Eye-p		3	10.34
14	Tactile map		6	20.69
15	Sound recorder		9	31.03
16	Talking books		8	27.59
17	Large print books		1	3.45
18	Brailler		12	41.38
19	Computers		9	31.03
20	Software		4	13.79

Table 7: User Satisfaction Level.

Queries	Lowly satisfied (%)	Moderately satisfied (%)	Much satisfied (%)	Very much satisfied (%)
Availability of resources	0	12 (41.38)	17 (58.62)	0
Library working hours	0	7 (24.14)	18 (62.07)	4 (13.79)
Available facilities and equipment	0	10 (34.48)	17 (58.62)	2 (6.90)
Staff skills on Braille resources	0	9 (31.03)	19 (65.52)	1 (3.45)
Qualitative and contents evaluation of Braille collections	0	15 (51.72)	12 (41.38)	2 (6.90)
Staff skills in answering the participant's information needs	0	3 (10.35)	16 (55.17)	10 (34.48)
Total satisfaction level	0	56	99	19

Table 5 gives statistics of total number of Braille books and also shows the total resources along with its types. Among the institutes Asansol Braille Academy (ABA) has the richest collection both in terms of Braille books and also the total no. of resources in Burdwan division. In this institute many software programmes like NVDA (Non-Visual Desktop Access) for reading the text on the screen in a computerised voice, JAWS which is a computer screen reader program for Microsoft Windows that allows the visually challenged to read the screen either with a text to speech output or by a refreshable Braille display, DUXBURY Braille Translation software which converts text to Braille for Braille printers and SPARSHA software that enables conversion of Indian languages text as input in Unicode and can convert it into Braille is used unlike other institutes which

don't have such software programmes. Table 6 shows the different type of library resources used by visually challenged students in the seven institutes. It is found that the usage of Braille books (93.10%), Geometric kits (68.97%), Taylor frame and types (62.07%), Computer (42.31%), Braille Slate and Stylus (41.38%), Brailler (41.38%), Types of Algebra and Types of Arithmetic (37.93%), Sound recorder (31.03%), Talking books (27.59%) and Eye-p (10.34%), Large print readers (3.45%) are used by students in Burdwan division.

Table 7 shows the user satisfaction level for the library services in the seven institutes. In Burdwan division the students are much satisfied with the library services and no students are lowly satisfied with the library services.

Table 8: Institute-wise User Satisfaction Level.

Name of the Institute (sample)	Satisfaction level	Queries					
		Availability of resources	Library working hours	Available facilities and equipment	Staff skills on Braille resources	Qualitative and contents evaluation of Braille collections	Staff skills in answering the participant's information needs
SSRSDS (3)	Lowly satisfied (%)	0	0	0	0	0	0
	Moderately satisfied (%)	2 (66.67%)	1 (33.33%)	1 (33.33%)	2 (66.67%)	1 (33.33%)	0
	Much satisfied (%)	1 (33.33%)	2 (66.67%)	2 (66.67%)	1 (33.33%)	2 (66.67%)	2 (66.67%)
	Very much satisfied (%)	0	0	0	0	0	1 (33.33%)
SAIS (5)	Lowly satisfied (%)	0	0	0	0	0	0
	Moderately satisfied (%)	2 (40%)	1 (20%)	2 (40%)	2 (40%)	3 (60%)	1 (20%)
	Much satisfied (%)	3 (60%)	3 (60%)	3 (60%)	3 (60%)	2 (40%)	2 (40%)
	Very much satisfied (%)	0	1 (20%)	0	0	0	2 (40%)
BBA (4)	Lowly satisfied (%)	0	0	0	0	0	0
	Moderately satisfied (%)	1 (25%)	1 (25%)	0	2 (50%)	2 (50%)	0
	Much satisfied (%)	3 (75%)	3 (75%)	4 (100%)	2 (50%)	2 (50%)	3 (75%)
	Very much satisfied (%)	0	0	0	0	0	1 (25%)
NSDV (2)	Lowly satisfied (%)	0	0	0	0	0	0
	Moderately satisfied (%)	2 (100%)	1 (50%)	2 (100%)	0	0	1 (50%)
	Much satisfied (%)	0	1 (50%)	0	2 (100%)	2 (100%)	1 (50%)
	Very much satisfied (%)	0	0	0	0	0	0
ABA (4)	Lowly satisfied (%)	0	0	0	0	0	0
	Moderately satisfied (%)	1 (25%)	1 (25%)	1 (25%)	1 (25%)	2 (50%)	1 (25%)
	Much satisfied (%)	3 (75%)	1 (25%)	1 (25%)	2 (50%)	0	0
	Very much satisfied (%)	0	2 (50%)	2 (50%)	1 (25%)	2 (50%)	3 (75%)
LBMSS (10)	Lowly satisfied (%)	0	0	0	0	0	0
	Moderately satisfied (%)	3 (30%)	2 (20%)	3 (30%)	2 (20%)	6 (60%)	0
	Much satisfied (%)	7 (70%)	7 (70%)	7 (70%)	8 (80%)	4 (40%)	8 (80%)
	Very much satisfied (%)	0	1 (10%)	0	0	0	2 (20%)
JIAWS (1)	Lowly satisfied (%)	0	0	0	0	0	0
	Moderately satisfied (%)	1 (100%)	0	1 (100%)	0	1 (100%)	0
	Much satisfied (%)	0	1 (100%)	0	1 (100%)	0	0
	Very much satisfied (%)	0	0	0	0	0	1 (100%)

ABA, Asansol Braille Academy, Asansol, Paschim Bardhaman; BBA, Burdwan Blind Academy (School Section), Sripally, Purba Bardhaman; JIAWS, Jirat Astha Welfare Society, Jirat, Hooghly; LBMSS, Louis Braille Memorial School for the Sightless, Makhla, Hooghly; NSDV, Nazrul Smriti Dristihin Vidyalaya, Gangpur, Purba Bardhaman; SAIS, Sri Aurobindo Institute for Sightless, Suri, Birbhum; SSRSDS, Sri Sri Ramkrishna Satyananda Dristideep Sikshaniketan, Rampurhat, Birbhum

From the Table 8, it is noticed that in Sri Sri Ramkrishna Satyananda Dristideep Sikshaniketan (SSRSDS) no user from the sample is lowly and very much satisfied with any type of service. Considerable size of sample i.e. 66.67% is moderately satisfied with availability of resources, staff skills on Braille resources and 66.67% much satisfied with library working hours, available facilities, staff skills in answering the participant's information needs, qualitative and contents evaluation of Braille collections.

In Sri Aurobindo Institute for Sightless (SAIS) it has been found that out of the selected sample about 60% are much satisfied with library working hours, available facilities, availability of resources, staff skills on Braille resources and 40% are moderately satisfied

with availability of resources, available facilities, staff skills on Braille resources. 20% moderately satisfied with library working hours, staff skills in answering the participant's information needs.

In Burdwan Blind Academy (School Section) (BBA) 100% are much satisfied with available facilities and equipment and 75% are much satisfied with library working hours, availability of resources, staff skills in answering the participant's information needs. 50% are moderately satisfied and much satisfied with staff skills on Braille resources and qualitative and contents evaluation of Braille collections respectively.

In Asansol Braille Academy (ABA) it has been noticed that 75% are much satisfied and

very much satisfied with availability of resources and staff skills in answering the participant's information needs. 50% are very much satisfied with library working hours, available facilities, qualitative and contents evaluation of Braille collections.

In Louis Braille Memorial School for the Sightless (LBMSS) we have noticed that the sample is much satisfied with all type of services. 10% and 20% are very much satisfied with library working hours and staff skills in answering the participant's information needs respectively.

As the population of Nazrul Smriti Dristihin Vidyalaya (NSDV) and Jirat Astha Welfare Society (JIAWS) in Burdwan division are quite less therefore sample size of these institutes are also less. So, quite remarkable differences in the satisfaction level could not be noticed from these institutes. In Jirat Astha Welfare Society (JIAWS), 100% moderate satisfaction is seen for availability of resources, available facilities and equipment and qualitative and contents evaluation of Braille collection. In Nazrul Smriti Dristihin Vidyalaya (NSDV) 100% moderate satisfaction is seen for availability of resources and available facilities and equipment and 100% are much satisfied with staff skills in Braille resources, qualitative and contents evaluation of Braille collections.

LIMITATIONS OF THE STUDY

The study is limited to one of the divisions of the eastern states in India. However such studies can be conducted in any part of India as well as the world. As the sample population is visually challenged individuals so interviewing them is also a challenge because putting any query before them needs special care. Sometimes the authorities of the organization are unwilling to co-operate as some of their flaws get identified in such studies. Therefore under limited resources and restricted co-operation this study has been conducted.

CONCLUSION

According to Census 2011, out of the total disabled population, 19% of the population are visually challenged in India. In West Bengal,

one of the eastern states in India, out of the total disabled population, 21% of the population are visually challenged. Education is the actual necessity for the overall socio-economic development of the people in any country and India is no exception. Education as a fundamental right has been guaranteed under Article 21A of the Constitution of India and free and compulsory education for all children with disabilities up to the minimum age of 18 years has been guaranteed in the Section 26 of the Persons with Disabilities Act, 1995. The Government of India has launched various schemes like the Sarva Siksha Abhiyan which ensure elementary schooling for eight years for all children including the children who face different physical challenges belonging to the age group of 6–14 years. Under Integrated Education for disabled children (IEDC) scheme, children in the age group of 15–18 years are provided free education (Government of India, 2017). To find out the living conditions of any population we need to study the population from the grass root level. What could be the better option than studying the students? So this study helps definitely the policy makers to think in a new line for the Right to Information and education, as, Information is the first and foremost resource for the Sustainable development of any nation.

Challenged students face more difficulties than most of the people to meet their information needs. This study on the information services available for the visually challenged students in blind schools in Burdwan division of West Bengal depicts the status of the libraries in these schools. While analysing the responses among the Burdwan division visually challenged students of 6 institutes out of the 7 institutes are very much satisfied with at least one service of the library. All these institutes should try to augment the accessibility and funding for the improvement of facilities to these students. Sufficient Braille resources and assistive technology are used by only Asansol Braille Academy (ABA) in this division. Ignorance creates hindrance in receiving funds both from the Central and the State Government.

A major barrier in the development of these students is the scarcity of teaching faculty in

these institutes. Five among the seven institutes don't use any software, Sri Sri Ramkrishna Satyananda Dristideep Sikshaniketan (SSRSDS) has only one software i.e. Braille transcribe software. Asansol Braille Academy among these institutes is rich in its collection as well as have a number of software's like JAWS, DUXBURY, NVDA and SPARSHA for the ease of use of resources by the visually challenged students.

In all these institutes it has been noticed that Current Awareness Service and Selective Dissemination of Information services which are the main types of information services are not provided. But other information services like Alerting service, Title announcement service, Career guidance service and Vocational training programme are provided to the students.

For the improvement of the library services trained library professionals are needed which is missing in these institutes. Only in one institute in Burdwan division i.e. ABA, trained librarians are recruited to run the library. So the overall scenario looks quite disappointing and needs attention from the governmental level. Raising awareness for education and information among the visually challenged population is needed to make them independent in the future.

ACKNOWLEDGEMENT

This work is the outcome of ICSSR Minor Research Project sanctioned vide letter no. 02/325/2017-18/RP/Minor dated 29-12-2017. The authors are highly thankful to ICSSR for the project grant.

REFERENCES

1. India. Census 2011. Available form <http://censusindia.gov.in> [accessed on October 2018].
2. Mitra S, Shukla A, Sen BK. University library services for the differently-abled people: A pilot study. *Library Herald*. 2014; 52(3):251–268p.
3. Jmj Roodhooft. Leading causes of blindness worldwide. *Bull Soc Belge Ophtalmol*. 2002; 283:19–25p.
4. Mittal SR. Visual Impairment. *Rehabilitation Council of India. n.d.*; 357–412p. Available from: www.rehabcouncil.nic.in/writereaddata/vi.pdf
5. Kinnell M, Yu L, Creaser C. Public library services for visually impaired people. *Library & Information Statistics Unit, Department of Information and Library Studies, Loughborough University*; 2000. Available from: <http://www.lboro.ac.uk/departments/dils/lisu/lisuhp.html> [accessed on October 2018].
6. Rosen L. Enabling blind and visually impaired library users: Inmagic and adaptive technology. *Library Hi Tech*. 1991; 9(3):45–61p.
7. Anne Murtha C. Public library access for the blind and visually impaired. *Vine*. 1997; 27(2):38–41p.
8. Oppenheim C, Selby K. Access to information on the World Wide Web for blind and visually impaired people. In *Aslib Proceedings* 1999; 51(10):335–345p.
9. Williamson K, Schauder D, Bow A. Information seeking by blind and sight impaired citizens: an ecological study. *Information research*. 2000; 5(4):5–4p.
10. Cookson J, Rasmussen L. National library service for the blind and physically handicapped: digital plans and progress. *Library Hi Tech*. 2001; 19(1):15–21p.
11. Jiang Z, Zhu X. Information Service Systems for Visually Impaired People. In *Service Operations and Logistics, and Informatics*, 2006. SOLI'06. IEEE International Conference on 2006; 219–222p.
12. Zia MW, Fatima F. Digital library services for visually impaired students: A study of the University of Karachi. *Pakistan Journal of Information Management and Libraries*. 2011; 12(1): 1–6p.
13. Lucky AT, Achebe NE. Information service delivery to the visually impaired: a case study of hope for the blind foundation wusasa, Zaria (Nigeria). *Research Journal of Information Technology*. 2013; 5(1):18–23p.
14. Wanbin LI, Yanna LI. A survey of the information needs of visually impaired library users. *CJLIS* 2014, 2014; 7(1):57–68p.

15. Koganuramath MM, Choukimath PA. Learning resource centre for the visually impaired students in the universities to foster inclusive education. *International Conference on Academic Libraries (ICAL), Delhi University, Delhi*. 2009.
16. Roy PC, Bandyopadhyay R. Designing barrier free services for visually challenged persons in the academic libraries in India. *In International Conference on Academic Libraries (ICAL-2009)*, 2009: 626–629p.
17. Government of India. Disabled persons in India: A statistical profile 2016. Government of India, Ministry of Statistics and Programme Implementation; 2017. Available from <http://www.mospi.gov.in/search/node/disabled%20persons%20in%20india> [accessed on June 2018]
18. West Bengal. Directory of Blind Institutes. Available from http://www.webelmediatronics.in/brlads/directory_WB.htm [accessed on June 2018]
19. West Bengal. Mass Education Extension & Library Services Department. Available from <http://www.meels.gov.in> [accessed on June 2018]

Cite this Article

S. Pradhan, N. Bhattacharyya Sahu. Information Services for the Visually Challenged Students in India: A Case Study. *Journal of Advancements in Library Sciences*. 2018; 5(3): 93–102p.