

A STUDY OF SPECIAL INFORMATION CENTRES (SICs) FOR VISUALLY IMPAIRED STUDENTS IN MUMBAI

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Abstract: - *Special Information Centres (SICs) are aimed providing rehabilitation services to the visually impaired so as to include them in the mainstream of education, this in turn would enable them to be self-reliant and live life with high self-esteem. Special Information Centres are responsible for the holistic development of visually impaired students and taking this into consideration the Special Information Centres not only provides information but also guidance, counselling and training facilities. The current study is aimed at studying the facilities available and services provided by the Special Information Centres for the visually impaired students in Mumbai.*

Keywords: Special Education, Inclusive Education, Special Information Centers, Visually Impaired Students

1. INTRODUCTION:

Right information to the right user at the right moment' is the motto of any information center. Special Information Centers are run by Government, NGOs and selected universities and colleges for addressing higher education needs of visually impaired students. The centers are aimed to assist the blind with education and training, to attain self-sufficiency and leading life to its optimum potential. A special information center for visually impaired students has to go one step

ahead and provide the right information in right format may be in a large print, audio, or special formats like Braille. Mumbai is an educational hub having more than 300 colleges offering various higher education courses, however only a handful of colleges offer special information center facilities for visually impaired students. Many colleges deny admissions to visually impaired students quoting that they do not have appropriate facilities to serve them. This is because most people think that making

information accessible to visually impaired students is a herculean task. However, in simple terms, it requires a three-pronged approach.

1. Physical Access to the Library
2. Access to Resources of the Library
3. Service and Communication

The current paper summarizes the current scenario, enumerating various aspects of the Special Information Centers that were surveyed on the basis of above approach.

2. RESEARCH METHODOLOGY:

The researchers used survey, interviews and observation method to collate the required data for the study. Following *Six* Special Information Centers were included in the study:

1. Andrew Vision Centre, Wilson College, Mumbai
2. M. K. Tata Memorial Learning Centre, Tata Institute of Social Science, Mumbai
3. National Association for the Blind (India) – NAB, Mumbai
4. Resource Centre for Students with Special Needs (Prajnya Vision), SIES College of Arts, Science & Commerce, Mumbai
5. Self-Vision Centre, Ramnarain Ruia College, Mumbai
6. Xavier's Resource Centre for the Visually Challenged (XRCVC) St. Xaviers College, Mumbai,

3. OBSERVATION & FINDINGS:

3.1 National Association For The Blind (India) – NAB

National Association for the Blind (India) - NAB established in 1952 is considered as a pioneer institution in Mumbai working for blind people. It tries to prevent blindness and if unavoidable then to empower the impaired with education and training, to attain self-sufficiency and lead life to its optimum potential. **One of its projects is the NAB Louis Braille Memorial Research Centre which conducts research on blindness related issues and enables policy makers understand issues faced by the visually impaired.**

Physical Access:

NAB has its own building having required signage and infrastructural support (ramps, handrails, adequate light, lifts, rough floor, etc.) which facilitates access to the institute. Friendly staff and volunteers make the visit more comfortable for visually impaired.

Resources Available:

- Well trained staff (~250)
- More than 5000 books, & periodicals
- More than 1400 Braille books, & periodicals
- More than 5500 talking books
- 3 acoustically designed recording studios
- Braille press
- Cyber Café with 5 Computers with screen reading and screen magnifying software

Services Provided:

- Short Term courses
- Vocational Courses
- Conducting Seminars, conferences, etc.
- Blindness prevention and vision restoration camps
- Aids and equipment's distributions
- Guidance & assistance for various welfare schemes
- Sports and Cultural Center
- **Nursery and School Education**
- Training Centre for Teachers of the Visually Impaired.
- Advocacy for protecting the rights of the visually impaired
- Employment guidance and assistance;
- Rehabilitation and counselling to accept the impairment

3.2 M. K. Tata Memorial Learning Centre, Tata Institute of Social Science

M. K. Tata Memorial Learning Centre established in 2008 has been setup at Sir Dorabji Tata Memorial Library, TISS to provide innovative teaching techniques and philosophy that continues to have far-reaching effects on the lives of its visually impaired students, taking them to new heights of success and independence.

Physical Access:

M. K. Tata Memorial Learning Centre is inside Sir Dorabji Tata Memorial Library which is located at the ground floor. However, to visit the center, one has to cross other sections of the

library and seem inconvenient for the visually impaired students. The wide highway to cross before accessing TISS, adds to problems of the visually impaired students which is addressed by the help of volunteers and fellow students.

Resources Available:

- Support staff (1)
- JAWS Pro Talking software (Ver. 10.0) A screen reader
- Kurzweil 1000 : A scanning, reading and writing software
- Magic Magnification Software Pro
- Talking Typing Teacher Pro
- Optical Braille Recognition (OBR)
- Prisma is a full colour video magnifier Device for Low Vision
- Zoom-Ex small portable Instant Text Reader
- Index Basic D Braille Embosser
- Freedom Scientific's SARA™ (Scanning and Reading Appliance)
- A separate digital archive has been maintained in the DSpace Digital Library portal where all the essential reading materials required by visually impaired students are digitized and maintained in the archive.

Services Provided:

- Free access to any visually impaired student
- Conversion of print into Braille or audio format

- Conducting Seminars, conferences, etc.
- Guidance & assistance for various welfare schemes
- Volunteer support

3.3 Xavier's Resource Centre for the Visually Challenged (XRCVC), Xaviers College

The Xavier's Resource Centre established in 2003 for the Visually Challenged (XRCVC) works towards creating an enabling environment to facilitate the development of an inclusive society both at the micro as well as the macro levels thereby providing equal opportunities for holistic growth for the visually impaired.

Physical Access:

XRCVC is located on the ground floor, at the left hand side inside the college quadrangle. Being on the ground floor it can be easily accessed by the students. The journey through Mumbai CST can be cumbersome at times due to the crowd and steps located at the entrance of the station and underground. These problems are overcome with the help of fellow students of the institute.

Resources Available:

- Trained Staff (~ 8)
- Computer-based screen readers for multiple languages like English, Hindi and Marathi, etc. - JAWS, Supernova, NVDA, ORCA, VoiceOver, Dolphin Guide specially designed for persons with low computer literacy etc.

- Screen magnifiers - MAGIC, Zoom Text, Supernova, etc.
- Screen readers for phones - TALKS, TalkBack, VoiceOver.
- Text-to-Speech (TTS) English Indian accent - Sangeeta, Hindi TTS, Lekha and C-DAC Marathi.
- Dictation software - Dragon naturally speaking software with screen reader, J-Say.
- Electronic low vision aids - CCTV systems and video magnifiers - Prisma, Ruby, Camera Mouse, Bonita, Smart View Pocket, etc
- Optical low vision aids SEE TV Glasses, Telescopic distance reading device, Illuminated magnifiers, hand-held magnifiers - a range of magnifiers and power lenses.
- Accessible OCRs to scan, edit, save and read aloud printed books, letters, etc. Programmes are Kurzweil 1000, Open Book, KNFB Mobile reader (phone-based system), ZoomEx. Standalone scanning machine like SARA, Flatbed Scanner and Camera edition.
- Scanners - Basic, high speed, A5 size and Automatic Document Feeder (ADF) types of scanners
- Braille Production System - Allows for electronic conversion and embossing of Braille in multiple languages - Shree-Lipi Braille, Duxbury and Winbraille programmes. Braille embosser Index 4x4

PRO and Braille typewriters like Mountbatten Pro and Perkins Brailier.

- Applications for keyboarding and spelling training - Software's assisting keyboarding and sharpening of spelling - Talking Typing Teacher Software, Speaking Spelling, Enable India Spelling Tool programme, Sayso specially designed for persons with dyslexia.
- Math Aids - Standard and Scientific Talking Calculators.
- Mac Book Pro - A Macintosh machine which has a built-in screen reader and screen magnifier programme VoiceOver
- DAISY books production software's - Applications to create DAISY books - Dolphin Publisher, Sigtuna, MystudioPC, Easy Producer, EasyConverter, Dolphin producer, OBI.
- DAISY playback software's - FS Reader, AMIS, Easy Reader, Daisy2go
- DAISY playback portable units - Victor Reader Stream, Buddy, Angel, Angel Pro, Plectalk PTN2
- Digital Recorders - To facilitate recording of notes and classroom instruction
- Tactile Graphic Production system High resolution tactile diagrams - Picture In A Flash (PIAF)
- Braille Note Taker - Speech and refreshable Braille unit - mPower Braille Note Taker, Pacmate.
- Talking Electrotherapy Equipment for Physiotherapists - Totally speech-enabled

Interferential Therapy Unit (IFT) machine of Unique Medical Appliances and the Talking Ultrasound from Johari Digital Healthcare Ltd.

- Other talking devices - Colour Recognizer, Blood Pressure Monitor, Thermometer, Personal Weighing Scale, Kitchen Weighing Scale, Wrist watch, clock, Pen Friend Talking Labeler.

Services Provided:

- Volunteer support for study and exams
- E-Library - As an active member of the Daisy Forum of India (DFI), which is an umbrella body of over 80 organizations aiming to promote print access in India, the XRCVC is not only an active producer of accessible study related books but is also a point where members can acquire accessible titles. In addition it also creates accessible formats on demand. These include Braille, audio and e-texts.
- Training programmes - Need-based short / medium term programmes focus on computer literacy, English language training, preparation for competitive exams, etc.
- Accessible Technology Orientation and Support
- Personal Counseling and Career Guidance (for individuals and families)
- Hardware Loans
- Financial Support

- Teaching Aids - Models, diagrams in accessible format, audio describe movies, Braille kit, geometry and algebra kit
- Accessible educational material, Games and Sports - Tactile educational books for science and geography, etc. playing Card games, Chess boards, Uno game, Cricket and Football games for the visually impaired.
- Organizing competitions and events for visually impaired persons.
- Awareness programmes

3.4 Resource Centre For Students With Special Needs (Prajnya Vision), SIES College Of Arts, Science & Commerce

Resource Centre for Students with Special Needs (Prajnya Vision) established in 1979 at SIES College of Arts, Science & Commerce was set up to impart knowledge and education to children with special needs. It is aimed to provide guidance, counseling, and additional facilities to the visually impaired students.

Physical Access:

The Centre is located at third floor. The access is facilitated with the help of ramps, handrails, lifts and volunteers

Resources Available:

- Support Staff (~12)
- 312 Braille Books Text Books in Braille purchased from NAB as well as Braille notes are provided to the students.

Dictionaries, atlases and books on Human Anatomy

- 2 Manual Braille Typewriters
- More than 500 Audio Cassettes / CD's containing recorded notes of different subjects for various classes.
- 8 Tape Recorders and 3 CD players
- 7 computers with multimedia facilities with NVDA software and JAWS software and typing master (which Reads the data entered or keyed in) along with Internet
- HP Scanner (G4010) to scan the printed material
- Kurzweil Software- to convert typed/scanned text into audio format.
- Victor Stream Reader to read the DAISY formatted books. It also helps to record notes and with the help of its inbuilt voice feature one can listen to the saved text documents.
- Access to Braille Readers Digest and Reliance Drishti.
- 'Talking typing teacher' helps students improve their communication skills, grammar and to learn new words.
- 2 Digital Voice Recorders having a capacity for recording for more than 5 continuous hours.
- Braille Printer.

Services Provided:

- Readers are provided regularly to the students to read out lessons and record notes.

- Scribes are provided during the examinations.
- Lunch is provided to all the students.
- Scholarships are provided to deserving students (Total Endowment Awards are 6 for the Visually Impaired Students).
- Support is provided to Students with maladjustment problems / emotional crisis.
- Training for computers operating and basic software skills.
- Free Coaching for UPSC / MPSC examinations.
- Coaching in English speaking and etiquettes.
- Career Counseling
- Chess Tournament is organized.

3.5 SELF VISION CENTRE, RAMNARAIN RUIA COLLEGE

The college has established in 1979 the Self vision center to bring the visually impaired students to the mainstream and enable them to be self-reliant individuals and live life with high self-esteem.

Physical Access:

The Centre is located at ground floor. The access is very convenient and facilitated with the help of ramps, handrails and volunteers

Resources Available:

- Support Staff (~4)
- Job Access With Speech (JAWS) - installed on a computer which reads aloud

all computer applications helping students to access and use the computer.

- Mountbatten MB Pro – talking electronic Brallier.
- Manual Brallier
- CCTV to help low vision students see text in magnified form.
- Braille embosser that converts English tests into Braille and vice versa.
- Magnifier
- Zoomex
- Computing Lab

Services Provided:

- Readers are provided regularly to the students to read out lessons and record notes.
- Training programmes - Need-based short / medium term programmes focus on computer literacy, English language training, preparation for competitive exams, etc.
- Accessible Technology Orientation and Support
- Personal Counseling and Career Guidance
- Lunch is provided for all the students (Midday Meal Scheme).
- Workshops on various topics like Anger Management, Leadership, Study Habits, etc.
- Events and picnics with buddies (Visional students) are organized.

3.6 Andrew Vision Centre, Wilson College

Andrew Vision Centre was established by Wilson College in 2008 to impart knowledge and education to children with special needs. It provides guidance, counseling, and additional facilities to the visually impaired students.

Physical Access:

The Centre is located at ground floor and is a part of Saint Andrew's House Hostel. The access is convenient and the hostellers and the hostel staff are always available as volunteers for the visually impaired students.

Resources Available:

- Support staff (~2)
- General knowledge books in Braille
- Textbooks and notes of Standard 12 (Maharashtra Board) in Braille
- Braille
- Braille printer
- JAWS - Computer-based screen readers
- 'Talking typing teacher' is also used to help students improve their communication skills, English grammar and to learn new words in the English language.
- MAGic,
- Kurzweil 1000 OCR.
- Daisy software to read the printed books and notes

Services Provided:

- Readers are provided regularly to the students to read out lessons and record notes.
- Writers are provided for exams
- Recording of notes by volunteers
- Lunch is provided for all the students
- Subscription of weekly Braille magazine – Reliance Dristi
- Weekly personal counseling is offered
- Organising events and matches for visually impaired students
- Conduct Personality Development Programmes
- Computer training
- Help them get jobs
- Rehabilitate visually impaired students whose families don't care about them.

4. DISCUSSION:

It is observed that only four colleges in the Mumbai Metropolitan Region have fully-equipped Special Information Centres i.e.

1. Ramnarain Ruia College
2. SIES College of Arts, Science & Commerce
3. Wilson College
4. Xavier's College

The other two institutes studied during the survey are National Association for the Blind (India) – a special institute for visually impaired and M. K. Tata Memorial Learning Centre, Tata Institute of Social Sciences – a research institute which offers

services for betterment of visually impaired students all over Mumbai irrespective of their affiliated school, college or work institution.

4.1 Physical Access to the Library

There are number of standards like IS 4963 developed by Bureau of Indian Standards for developing Building facilities for the Physically Handicapped, National Building code (1970 rev. in 2005), Guidelines and Space Standards for Barrier free Built Environment development developed by Central Public Works Department in 1998. UGC in its XI Plan has also mentioned 'that building projects should conform to the norms laid down by the PWD, or CPWD... to enable the use of the building for the differently-abled (physically impaired) persons'. To facilitate physical access to the special information center one should take following measures:

- Appropriate signage should be there on both inside and outside of the library building.
- Entrance should be well lighted for the persons of low vision.
- Good lighting is essential in the floor with an even level of illumination without shadows.
- Audio signals near the entrance are also required to indicate various parts of the building.
- Ramps should be provided especially where there are changes in elevation on walkways, corridors or parking place.
- Handrails are to be provided on both sides of walkways, ramps and staircases. Handrail

helps maintain balance and can prevent serious falls. Continuous handrail helps them to understand the changes in the direction.

- Path for walks should not be interrupted by steps. Path surface should be obstacle-free and on a slip-resistant continuous plane.
- If the building is more than one storied, elevator facilities should be provided. The elevator should have different audio signals to indicate up and down direction.
- Building should be equipped with fire alarms. There should also be an open space where the disabled users can take shelter before evacuation in case of any alarm.

In the surveyed Special Information Centers, only National Association for the Blind (India) seems to be following almost all the standards regarding the physical access. The rest of the organizations rely on ramps, handrails, lifts and largely on volunteer support. Audio signals, special lighting or flooring was not paid much heed.

4.2 Access to Resources of the Library:

Visually impaired students requires alternative format to standard print such as enlarged print, embossed print and spoken word. Large print is required for people with low vision. Embossed print is the material in Braille format is used by persons habituated with Braille reading. Spoken word indicates the form of audio tape which includes talking books, newspapers and periodicals on tape. Modern computer technology helps to modify print medium into alternative

format suitable for people with disabilities and help them to work independently. Some of these technology includes screen reading software, magnifiers, Brailers, Braille printers, Braille translation software, Optical Character Reader (OCR), Speech synthesizer Four-track Cassette recorder, Large print printer, CCTV (Closed Circuit Television), etc. Specially created college websites with modern ICT can prove an effective learning and guiding resource for visually impaired users

Almost all the surveyed Special Information Centers had adopted modern assistive technologies and have their own collection of resources for visually impaired students though no college seems to provide specially designed Webpage's. However, the problems faced by the centers were initial investment and maintenance cost of equipment's and software which is too high. The equipment's are not easily available in India and needed to be imported. The same holds true, for its maintenance where the replacement parts and personnel needed are not easily available. This becomes a costly and time consuming affair. Braille or talking books are not available for every topic and creating one again demands for a lot of time and resources. Unavailability of volunteers and required resources makes it difficult to avail required resources for the visually impaired students. Handling of these special resources also requires facilities like air-conditioning, special storages, training, etc.

4.3 Service and Communication:

The effectiveness of Special Information Centers mainly depends on services offered and awareness created by the center. To provide efficient services, the center should have sufficient number of well trained, sympathetic staff. There should be a talking zone where formal reader service can be provided. Trained professionals or volunteers can read out the relevant information to the visually impaired users whenever needed The staff do not have special training but do occasionally attend workshops organized by various organizations. 83.33% centers are handled by in-charges who were themselves visually impaired, as it was considered that they would understand the issue faced by the students in a better way. Only one Centre XRVC holds a program "Antarchakshu" to create awareness among individuals and sensitize them towards visual impairment. Certain centers do value adding work towards developing databases for visually impaired (TISS), addressing issues like copyright (Xavier's) and organizing normal buddy paired picnics.

5. CONCLUSION:

In Mumbai, among hundreds of colleges only four colleges have Special Information Centers for visually impaired students. These colleges cater to the needs of barely 130 out of the 350 visually impaired students in the city. "Colleges that don't house these centres claim that they don't have a minimum of 10 disabled persons, including persons with visual impairment, hearing impairment, and locomotors disability in its

various courses, which has been enumerated in the Higher Education for Persons with Special Needs (HEPSN) scheme,” said Dr Suhas Karnik, honorary secretary, NAB. “Hence, they choose not to establish a centre, in spite of being eligible to seek a grant from the University Grants Commission (UGC) for establishing and maintaining it,” he said, adding that the students in turn, refrain from joining such colleges. “It is a vicious circle.” The existing centers faces crucial problems about having adequate staff and funds. The UGC provides only 2% to 3% of the total cost incurred in setting up and maintaining the centers. Running the facility is more expensive than establishing it as one needs to update the software and machines regularly. For the same, the Special Information Centers have to rely on private sponsors and society.

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