

ICT Facilities and Services at M. K. Tata Memorial Learning Centre for Visually Challenged

Mallikarjun Angadi

Muttayya Koganuramath

Abstract

Attempts have been made to highlight the State-of-the-Art ICT facilities and services made available at M.K. Tata Memorial Learning Resource Centre which was established in 2008 at Sir Dorabji Tata Memorial Library, TISS to keep pace with time and advances in information technology. The centre is comprising of more than 20 workstations with latest configurations along with 10 HP scanners. It provides access to Internet, Dspace Archive, Braille printer, instructional learning materials and ICT based information services. Special software like JAWS, Kurzweil, Magic Magnification, Zoom-Ex Instant Reader, Win Braille, OBR, Spell Well, Talking Teaching Type Pro have been procured in the centre. Special equipments like Prisma for low vision, SARA for instant text reading are also available in the centre.

Keywords: Academic Library, Visually Challenged Persons, ICT

1. Introduction

Disability can be defined as a physical or mental condition that prohibits an individual from the use of his or her body (either partially, completely and with ease) to perform daily tasks. It can also be defined as meaning that one cannot learn easily.

It should be noted that in addition to the physical challenges, visually impaired and physically handicapped people face the ignorance barrier, a major prejudice and most harmful social discrimination. These difficulties are not compensated for by emotional speeches. Public awareness and equal opportunities are necessary conditions to integrate them into society (Todaro, 2001).

It is already established that access to information is one of the most important human rights: it allows

the individual to develop himself/herself, and participate actively within a democratic society, fully exercising his/her rights and duties (Todaro, 2001).

A badly informed community, or one that restricts information to an elite group, in the long term becomes a non-democratic society in which ignorance and inequality of opportunities will unfailingly lead to intolerance and discrimination among citizens (Todaro, 2001). All citizens should therefore have access to information that will enable them to be active and equal contributors and participants in society.

The World Wide Web provides a great potential to the academic and research community as an instrumental tool that extends the content of the curriculum, enrich class room discourse, remote communication and enhance learning opportunity. It has become possible to connect with learning resources located in libraries and information centres



across the globe, and TISS proposes to establish M K Tata Memorial Learning Centre for Visually Challenged students of TISS to access to such learning resources.

2. Early Initiatives at SDTMLibrary

The present library, Sir Dorabji Tata Memorial Library, is one of the premier social science libraries in the world established with the support of Sir Dorabji Tata Trust and is used by people from all over the world. Presently the library is in the process of expansion of library facilities by having digital library, cyber library, document delivery system for the Asian library users. However, some of visually challenged students are at a disadvantage as they will not be able to make use of these facilities. Since the institute has admitted several visually challenged students in various programmes and library has only one Galileo Reading machine at present donated by Sir Dorabji Tata Trust in the year 1999 and inaugurated by Shri. Ratan Tata, Chairman, Tata Group.



Shri. Ratan Tata inaugurating the Galileo Reading System for the Visually Challenged students (1999)

To ensure equality of access to ICT for Lifelong Learning, to Literature, and for the Information needs

for those with a disability, the library had submitted a proposal to M K Tata Trust in September, 2007 for the establishment of “M. K. Tata Memorial Learning Centre for Visually Challenged Students” at TISS Library. Development of M. K. Tata Memorial Learning Centre for Visually Challenged Students therefore bridges the gap between visually challenged and others and give an equal opportunity to access available information sources in the form of book, journal, online databases and electronic journals.

Objective: To establish a learning centre exclusively for the support of visually challenged students which will have computer assisted reading facilities.

Justification and Anticipated Impact: One of the major difficulties faced by visually challenged students is to access learning materials available in print and electronic version. Not all information is available in Braille version. This learning centre will provide;

- ◆ Independent reading of books/journals and library services
- ◆ Computer Training for Independent Access of Computers and other ICT equipments
- ◆ Provision of curriculum in alternative format namely Braille, large print or soft copies on CDs.
- ◆ Congenial Classroom environment

Funding and Sustainability: It is proposed that the M K Tata Trust be approached to support the establishment of the M K Tata Memorial Learning Centre for Visually Challenged. From the current academic year, TISS has started charging the students a small fee as ‘Development Fund’ to pay maintenance of these new facilities.

The centre will cater to the Visually Impaired and Physically handicapped students. A computer reading facility for visually impaired will be provided

which reads and stores all printed documents including letters, books, magazines and newspapers in floppy. Even stored information in the floppy can be read through this machine. The user can record it in tape and listen the information at home. This machine is used by the students as well as general public in and around TISS. Library will set up a separate unit for the Visually Impaired students where 10 dedicated computers with JAWS software loaded and Galileo Reading System have been installed.

3. Salient features of M K Tata Memorial Learning Centre

Provision of the following facilities is critical to the quality of teaching and learning experiences in Computer training centres for the visually impaired.

- ◆ Computer Training for Independent Access of Computers
- ◆ Independent reading of text books/ library services
- ◆ Provision of curriculum in alternative format namely Braille, large print or soft copies on floppies or CDs.
- ◆ Congenial Classroom environment
- ◆ Barrier free access to the disabled.

Computer Training for Independent Access of Computers

Today the visually impaired, deaf, deaf blind and physically challenged can also learn computers. JAWS Software for the blind, which converts a normal PC into a talking PC, Magic Magnification Software for low vision persons and speech recognition software like the Qpointer Hands free, modified keyboards, switches, pointing devices for physically handicapped and Converser FM assistive listening devices for deaf make it possible to train

the disabled in computers. Knowing computers would also help them in their education as they can acquire an ocean of knowledge and information from the Internet.

Independent Text Reading

The blind and low vision students today are dependent on voluntarily readers and are able to barely manage to study their textbooks but due to acute shortage of human readers these days, the problems have multiplied. However, with the use of Text Reading machines, like the K1000 OCR reading software, which using a PC and scanner convert any printed text into sound and magnify the text for low vision on a Standard TV/ monitor, or even provide support for reading, writing and studying for dyslexic [learning disabled] they can simply borrow any book from the library and read the same independently and Prisma print magnifier connected to a 21 inch TV or monitor for low vision.

Provision of curriculum in alternative format like Braille computer lessons

With the setting up of a high speed computerized mini Braille printer, they can get their lessons of their choice in Braille, even one copy, if so desired on demand as and when needed. They can also carry home notes or a few chapters of a textbook taken from the library duly converted into Braille for studying at their own pace at home. This facility can be extended not only to English language but one can also produce Braille text in Indian languages. Besides, one can also provide Braille print-outs not only in text but also charts, maps, diagrams, pictures incorporated along with the text.

4. M.K. Tata Memorial Learning Centre: State-of-the-Art ICT Facilities

M. K. Tata Memorial Learning Centre has been setup at Sir Dorabji Tata Memorial Library, TISS in 2008 to provide innovative teaching techniques and philosophy that continues to have far-reaching effects on the lives of visually challenged and taking them to new heights of independence. M. K. Tata Trust, Mumbai has funded the project. Ms. Piloo Tata, Chairperson, M. K. Tata Trust was inaugurated the centre on 7th May, 2008 during the Institute Convocation function. The Centre has acquired latest technologies to assist visually impaired readers. For the first time, partially sighted people can now read for long periods of time without tiredness. It is a unique computer reading facility for visually impaired with a congenial classroom environment. The Centre is aimed



to provide barrier free access and independent reading of library materials. The Centre believes that with proper training and opportunity, visually challenged people can compete on terms of equality with their sighted peers.

Provision of the following latest assistive technologies is critical to the quality of teaching and learning experiences in computer training centres for the visually impaired.

JAWS Pro Talking software

For conversion of a normal PC into a Talking PC to enable the blind to operate computers independently including Internet Access and also to train blind persons on using the computer.

Kurzweil 1000 OCR reading software

An excellent support for blind students to read any printed books from the library to have independent access to not only their text-books but also other general reading. It is used with a combination of a scanner and a PC.

Magic Magnification Software Pro

Useful for enlarging the screen from 2x to 16x enabling Low vision students to view the monitor screen as well as use the add-on support tools for enhancing visibility.

Talking Typing Teacher Pro

Talking Typing tutorials specially designed for the blind with complete guidance & practice lessons for learning keyboarding skills & developing typing speed in a systematic manner. Since the program also has a complete display of all lessons, even the low vision students can read and learn to type.

Braille Scanning Software – OBR (Optical Braille Recognition)

Optical Braille Recognition (OBR) is a Windows software program that allows you to ‘read’ single and double sided Braille documents on a standard A4 scanner. It scans the Braille document, analyses the dot pattern, and translates it into normal text that it presents on the computer screen.

Prisma Magnification Device for Low Vision:

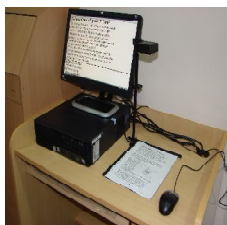
Prisma is a full colour video magnifier with a stylish, adjustable camera stand and integral table

that allows a tremendous range of magnification in a convenient size. The simple controls allow you to view in full colour or enhanced reading modes. Magnification is achieved by raising or lowering the camera and re-focussing with the large focus control located on the top. Prisma uses a standard TV for its display, so you can take it just anywhere. The clearance under the camera allows you to write easily and even perform hand tasks such as needlework or carving. (With the help of a VGA converter it can also be connected to computer screen; to be procured separately)



Zoom-Ex Instant Text Reader

Zoom-Ex is a small portable device that uses the new generation Motion Sensor technology in combination with its proprietary Zoom Office software to make scanning & instant reading of text fast and easy. Place a book under the highly sensitive camera and start reading or listening instantly and that too with an Indian Accent Voice! and with every turn of a page, the camera takes a snapshot of the page automatically. It then converts these photographic images to readable text. A book of 200 pages is ready in 8 minutes! Now read it at your own pace for long hours.



Index Basic D Braille Embosser

Index Basic D low cost, High Speed, Double sided Tractor Feed continuous sheet, new generation technology Braille embosser. Important features are:

it produces 2 pages i.e. front and back at the same time; uses Tractor Feed paper

which can be spiral bound using plastic wire making it very economical; does not require any special binding equipment; supplied with an



acoustic cabinet. The acoustic cabinet is very important for reduction of noise level during printing as well as protection of the printer from heat and dust. It also enables collection of the paper in an orderly manner.

Freedom Scientific's SARA

Freedom Scientific's SARA™ (Scanning and Reading Appliance) is an affordable and easy-to-use solution for reading a wide variety of printed material including books, mail, newspapers, magazines, and so much more. SARA uses the latest in advanced optical character recognition technology to scan text and then read it aloud in crisp, clear speech. SARA automatically stores and remembers the contents of hundreds of thousands of scanned pages.

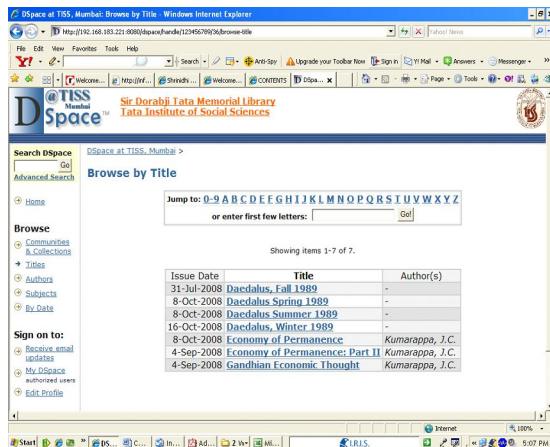


DSPACE Digital Archive:

A separate digital archive has been maintained in the DSPACE Digital Library portal where all the essential reading materials required by visually challenged students are digitized and maintained in the archive.



DSpace Digital Repository



Some titles available in the Archive

Infrastructure facilities

Desktop Computers: 20 Hp Pentium computers under LAN environment

LAN Connection: For inter connecting the computers for better management & control by the computer trainer.

HP Scanners: For use with K1000 for reading by blind students

Headphones: To avoid disturbance & confusion when listening to JAWS by many persons at the same time.

UPS units: For providing stabilized and uninterrupted power supply for at least 10 minutes to prevent loss of data and damage to the equipment caused by frequent power breakdowns.

Air-conditioner: Required to protect the equipment from heat & dust and also to maintain a cool temperature which is important in areas with high temperatures during summers

5. Conclusion

Visually impaired persons and the blind in general and TISS students in particular, can derive great benefit from M.K. Tata Memorial Learning Resource Centre for visually challenged. It will make them independent users and consequently enhance their independence as members of wider society. Maximising the use of these assistive technologies and its myriad services will improve their opportunities in education and their access to information, vastly improving their quality of life.

References

1. **Charles, S., and Foster, M.** Supporting Library Users with Disabilities: A Guide for Front-line Staff. Dundee: University Library, 1998. Available at: <http://scurl.ac.uk/WG/SNG/documents/DisabilityBooklet1.5version2no percent20pics.pdf> (accessed 17 December 2008).
2. **Library Services for Visually Impaired People:** a Manual of Best Practice, 2000. Available at: <http://bpm.nlb-online.org/> (accessed 17 December 2008), .
3. **Benson, P.** Libraries for the blind: partnerships: models of service I – Trinidad and Tobago, 69th IFLA General Conference and Council, Berlin, August 1-9, 2003. Available at: www.ifla.org/IV/ifla69.htm, (Accessed on 12 December, 2008)

4. **Getz, I.** Libraries for the blind – workshop: what do blind people want from talking books?, 69th IFLA General Conference and Council, Berlin, August 1-9, 2003. Available at: www.ifla.org/IV/ifla69.htm (Accessed on 28 December, 2008)
5. **Mates, B.** Computer technologies to aid special audiences. Library Technology Reports, ALA Tech Source, 2004, 40 (3).

About Authors

Mr. Mallikarjun Angadi, Information Scientist,
Tata Institute of Social Sciences,
Deonar, Mumbai - 400088
E-mail: angdi@rediffmail.com

Mr. Muttayya Koganuramath, University Librarian,
Tata Institute of Social Sciences,
Deonar, Mumbai - 400088
E-mail: koganuramath@rediffmail.com