12.

BEYOND EYE'S ASSISTIVE TECHNOLOGIES AND PERSONS WITH DISABILITIES (DIVYANGJAN): GLOBAL PUBLIC LIBRARY PERSPECTIVE

Deepak Kumar Shrivastava

Divisional Librarian & Head
INELI South Asia Mentor
Govt. Divisional Public Library Kota, Rajasthan
deepakshri1974@yahoo.co.in

A successful library serves the immediate needs of the community. You can't fit a square in a circle
~ Gene Coppola

Abstract

This Paper is prepared to make aware the Person with Visual impairment as well as Librarians who is serving to visually impaired community about assistive technology. It dwells upon the use and importance of assistive technologies in general and their use for visually Impaired Library users in particular. Further, it gives suggestions for implementing assistive technologies in Public libraries for making visually Impaired Library users and self-reliant learners in accomplishing their academic and research pursuits.

Key Words: **Assistive technology** (AT), **Activities of daily living** (**ADLs** or **ADL**) , Accessible Educational Materials (AEM), Assistive Listening Device (ALD), Audio-Assisted Reading (AAR), Audio-Supported Reading (ASR), Augmentative and Alternative Communication (AAC) System, Digital Talking Book (DTB), Do-It-Yourself (DIY), Emotional and Behavioral Disorder (EBD)

1. Introduction

Can you imagine your library becoming accessible to everyone without any walls? In recent years, many librarians have argued that public libraries have become outdated. With growing technologies, a certain section of the people who have access to the internet prefers to borrow books from online or offline sources. However, fifty percent of the population still does not have access to the internet, current technologies for getting real-time & relevant information that can improve their overall quality of life. Given this background, public librarians across the globe in the past decade are repositioning public libraries as lifelong knowledge learning centres providing community need-based services.

Let us recall the Public Library Manifesto (1994), you have reviewed in the understanding-self module part II-additional reading material. The manifesto states that "the services of the public library are provided based on equality of access for all, regardless of age, race, sex, religion, nationality, language or social status". To ensure nationwide library coordination and cooperation, legislation and strategic plans must also define and promote a national library network based on agreed standards of service. The manifesto clearly emphasizes the needs that the library services should be

customized to the needs of the communities. So, the public library network must be designed in relation to national, regional, research and special libraries as well as libraries in schools, colleges and universities. This network will act as information, knowledge and resource pool through your library.

Public library services have to be physically accessible to all members of the community. This requires well-situated library buildings, good reading and study facilities, as well as relevant technologies and sufficient opening hours convenient to the users. It equally implies outreach services for those who are unable to visit the library. The library services must be adapted to the different needs of communities in rural and urban areas.'

The success of your library depends on the level of use of the library and its services. The annual Indian Public Library Conference held in 2015 and 2016 recommended that the public libraries should follow a community-centered approach especially in collection development and service delivery. How would you know the needs of the community you serve ? Getting to know the needs of your community is the first step for you, even before you begin to provide any new services in your library.

If we talk about inclusive Services for Persons with Disability then it is important to discuss on Information and Communication Technology(ICT's) or ICT lab for impaired.

Assistive technology refers to hardware and software designed to help people with disabilities. Some types of assistive technology provide physical assistance, while others provide helpful aids for individuals with learning disabilities. Wheelchairs provide mobility for individuals who are unable to walk.

2. Objectives of this Assistive Technology Lab: -

- Access to Technology aided skills and communication development of Communication.
- Adaptations through assistive technology for individual's abilities.
- Knowledge acquisition, encouragement for collaborative efforts and updates through network connectivity
- Encourage research and development for make in India assistive technology products facilitating product evaluation and feedback from users
- Training modules on assistive technology and ICT based teaching to develop listening, speaking reading and writing, drawing, mathematical skills.

3. Need for this Assistive Technology Lab:-

1. New learning methodologies for PWDs include information communication technologies (ICT) and assistive technology (AT)
2. They offer significant improvements in inclusion, development, e-learning and education particularly for persons with multiple disabilities.
They assist and support them as vital enablers in their path for equal employment and independent living opportunities.This lab is established with special reference to RPWD Act 2016 chapter 8 section no 42 "Access to Information and Communication Technology"

4. This Assistive Technology Lab for Pwds Aims To Fulfill the Mandate of

- Signatory to declaration on the full participation and equality of PWD's in Asia Pacific Region (2000)
- Signatory to the Biwako Millennium Framework (2002) for action towards inclusive
- Barrier free and rights based society, BiwakoPlsu Five (2007)

- UN Convention on the Rights of PwD's (2008)
- The Incheon Strategy to "Make the Right Real" for PWDs in Asia and the Pacific (2012)
- The Sustainable Development Goals (2015) pledges for "Leaving no one Behind"
- National Action plan as skilling for PWDs 2015
- The Rights of Persons with Disabilities Act, 2016

4.1 Touch Screen and large Display Monitor

Magnified viewing, clicking, scanning and typing text and operate on icons, menu, with onscreen keyboard for low vision and gross / fine motor difficulties.

Photo Courtesy: Google
*Figure 1:**Touch Screen and large Display Monitor***

4.2 Refreshable Braille Display and Note Taker

Reading text, navigating, operating commands from computer/ laptop/ mobile devices in Braille, typing / input text using 6 key typing with note taking for blindness, deaf blind conditions.

Photo Courtesy: Google
*Figure 2:**Refreshable Braille Display and Note Taker***

4.3 Large Print Keyboard

Typing / operating computers/ Mobile devices with color contrast key for persons with low vision, reading difficulties.

Photo Courtesy: Google
*Figure 3:**Large Print Keyboard***

4.4 Colour coded hard press keyboard

Hard press rugged keys for rugged aggressive operations, fine motor difficulties with different colour code for alphabets, numbers command keys, special characters to assist typing and operations for intellectual and developmental disabilities.

Photo Courtesy: Google
*Figure 4:**Colour coded hard press keyboard***

4.5 Onscreen Keyboard

Onscreen keyboard in computers or mobile devices that enable clicking, scanning type inputs with word prediction with easy typing and composing longer contexts for persons with gross/ fine motor difficulties.

4.6 Trackball Mouse

Adapted Mouse for rugged operations, with firm grip to surface for gross and fine motor difficulties, amputation in hands with easy to scroll trackball and distant left and right click keys

4.7 FootMouse

Adapted Mouse with firm grip to surface for gross and fine motor difficulties, amputation or absence of hands with easy to scroll foot control and distant left right click keys to operate computers/ mobile devices.

4.8 Contact and Non – Contact Switches

Adapted contact switches for rugged or fine contract using hands or any body parts, or palm and finger grasp pressing, or single finger press operational, easy to fix in any assistive device to operate computers/ mobile devices for persons with gross or fine motor difficulties.


4.9 Camera Mouse

Camera based adapted mouse for computer operations for those with severe gross / fine motor difficulties in hands and legs.

4.10 Screen Reader

Read language text contents, menus in computer / mobile devices and operate applications with voice enabled. Also convert text to Braille for refreshable Braille display reading for visual impairments and reading difficulties.
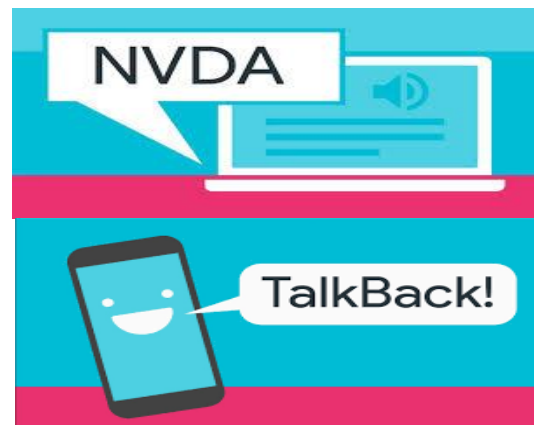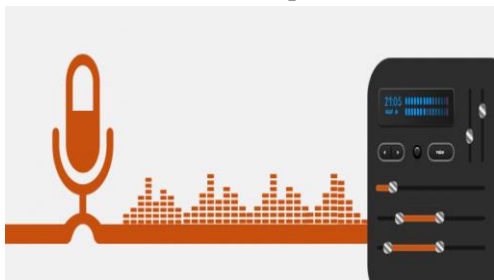

4.11 Talking typing tutor

Learn computer keyboard operations with practices sessions and exercise voice enabled for visual impairments.

4.12. Speech Recognition Software

Speak and operate the computer or mobile device, or type with voice in english as well as Indian languages for note taking for persons with locomotors, visual impairments.
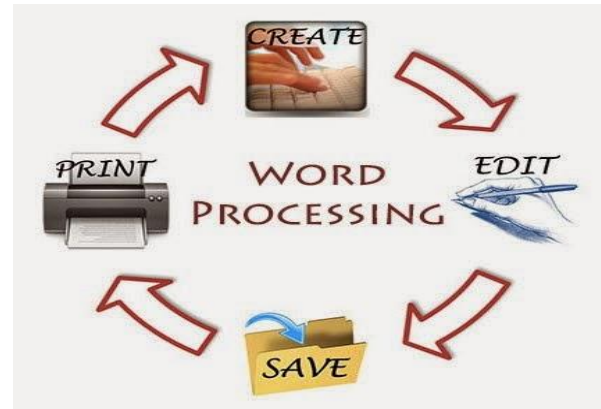

4.13 Picture Text Speech App

Communication and Language development app in multi language with images, audio recording facility for children with speech impairments, autism and other developmental disabilities

4.14 Literacy Support Software with Easy Word Processing Features

Easy to use word processor with multi – disciplinary way of output and input features that support persons with intellectual, autism learning difficulties, locomotors, visual and hearing impairments with word prediction, interactive worksheets, visuals, text as well as audio.

4.15 Augmentative alternative Communication (AAC)

Augmentative communication App facilitates picture, text, speech in words, sentence formats also by typing for persons with non – verbal conditions of autism, cerebral palsy and speech impairments


4.16 Indian Sign Language Dictionary

Learn and communicate with Indian Sign language for English and Indian languages


4.17 Mobility Aid and Reading App

Mobility aid app supports in finding the location, nearby facilities, scan and read text in print forms for persons with visual impairments. Audio recording facility for children with speech impairments, autism and other development disabilities.
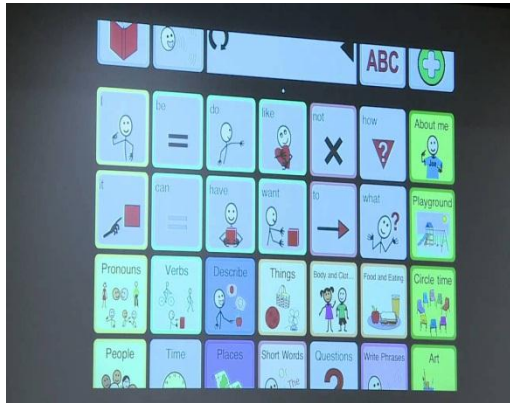
4.18 Braille tutor

Learn and communicate with Indian Sigh language for English and Indian languages
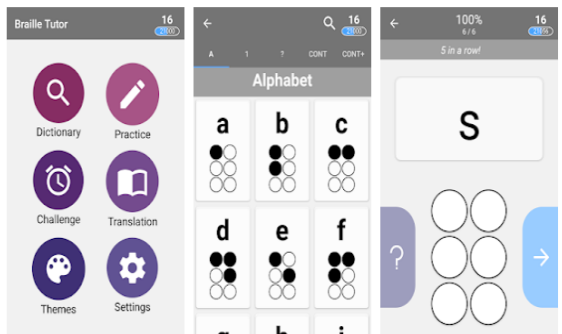
Braille Tutor is the fast, free, and fun way to learn Braille, regardless of how much sight or experience

4.19 Online Labs with Simulations.

Interactive online simulations for practical experiments in Physics, Chemistry, Biology. Math's for children with hearing, intellectual impairments as a virtual science laboratory

4.20 Online accessible Library

Online accessible library for person with print disabilities to read books magnified, as audio, as well as convert to Braille if required
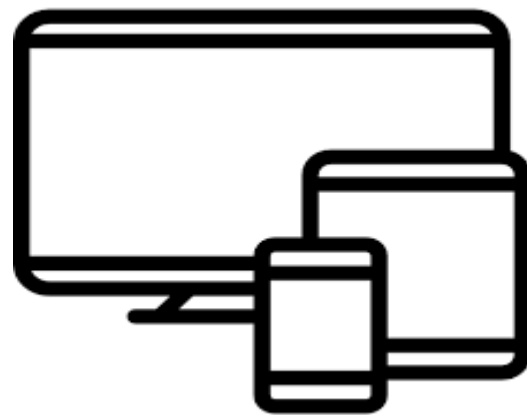
4.21 Tablet Mounts

Table mounts with swivel motion for persons with motor difficulties to easily handle mobile devices and tablets in workstations.

4.22 DAISY Players

DIASY Players support persons with print disabilities to list to text books as talking books with easy navigation, bookmarks and can read PDFs, documents files.

4.23 Mobility Alert Aids Support for VI

Mobility aids like Smart Cane, Saarthi, Ausion support persons with visual impairment in identifying obstacles above ground level for navigation with vibration, audio alerts.

4.24 Sublimation Printing Machines

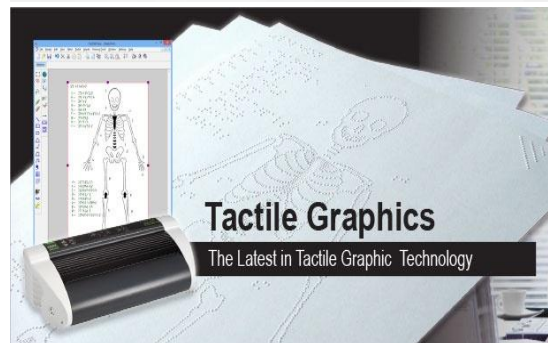Dye sublimation printing transfers images onto materials with a colour impression on them.

4.25 VOCATIONAL TRAINING DEVICES

Scanners, Printers and Lamination Machines

4.26 TRACTILE GRAPHICS, BRAILLE PRINTING

5. ICT LAB Users

From inception in 2015 the lab crated awareness and encouraged various stakeholders in knowledge acquisition, training and use

- Persons with disabilities
- Parents

- Teachers
- Special educators
- Vocational instructors
- HDR trainees
- Internship students
- Rehabilitation professionals
- Teacher training institutions
- Children in special and inclusive schools
- Visitors from various fields
- Government authorities
- Employers (private & public sectors)

disabilities the ability to interact with the outside world. These devices function as a persons' eyes, ears or voice. Without them, many people would be unable to work, lead independent lives or communicate with other people.

By the Go through with This Paper, People's with Visual Impairment and Librarian's engaged in serving to such community can benefitted about technology helps beyond Eye's. Hope tech Targets will help to understand about assistive Technology.

Conclusion: Finally, in brief Assistive technology devices give people with

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