

Ict Enabled Assistive Tools Applications in The Library for Enhancing Resource Access and Personality Development of Differently Abled Students.

SK Anisur Rahaman^{1*}, Dr. Dhiraj Sharma²

^{1*}Research Scholar Dept. of Library& Info. Science Mangalayatan University, Aligarh, UP, India -202146

²Assistant Professor Dept. of Library& Info. Science Mangalayatan University, Aligarh, UP, India -202146

Abstract.

Library plays an important role in the society in providing right information and documentation service. The person with disabilities needs special attention as they are differently abled. This present study evaluates the different type of ICT based assistive tools and their function which are used in the library for differently abled students. The present study examines the existing scenario of ICT based assistive tools and it's used in the library for dissemination information to the differently abled students. Rpwd 2016 Act in India provides several guidelines for educational institution to adopt policy for differently abled students so that they can get equal rights and access to resources. The present study highlighted about special equipment infrastructure, library services that are expected to provide by the library and information service provider institutions.

Keywords: ICT, Assistive Tools, Library Services, Differently Abled Pupils. Library Resources.

1. Introduction:

We live in this world which is full of diversity. Each living being in this world is unique. There is an unimaginable creation of God. Each living being is separated from each other with unique quality. Every child born in this world with unique charter of mind and body. Each one has their own ability and capacity. Differently abled students need special environment and attention to compete with the general students. Differently able students are able to do the same work but they need special assistance. library has been transforming from traditional to modern ICT enable services. Advance information communication technology has improved the service delivery of library especially for physically challenged students. Library has important role in enhancing the equal resource access and distribution to all the users. By applying ICT assistive tools library can help a lot to the differently abled students. National Education Policy of India 2020 emphasized on the effective use of information communication technology for physically challenged students in the college and university campus for overall development. RPWD Act 2016 suggested that Govt. should take appropriate step so that disable pupils can enjoy equal rights and respect in the society. Ministry of education and UGC has given several guidelines to the educational institution for providing proper facilities the differently abled students including use of ict based assistive technology inside the campus.

2. Review of Literature:

Tripathi and Shukla (2014) Studied the assistive technology use in academic library in Canada, UK and India. Study highlighted the use and importance of assistive technology for differently abled students. Study suggested proper implementation of assistive technology in academic library for overall development of physically challenged users in the library. **Ishaya and Adhukand (2016)** Highlighted the use adaptive technology in LIS service for differently abled users in Kaduna state. Study shows that computer, hearing aid, and tape recorder are important tools available in the special school for physically challenged user in Kaduna State. Study recommended that highly qualified staff should be appointed for providing proper services to the differently abled students in the state of Kaduna. **Midhula Soman NS and KG Sudhier (2021)** Investigated the use and awareness of assistive technology among the school students in Kerala. It is found that 49.5% students are aware about assistive technology. Girl students are more aware and updated about assistive technology. Students responded that they did not get any instruction about e-resources and library services. School authorities are important source for giving training to the physically challenges users. **Viner, Mark and others (2020)** Studied on various devices available for physically challenges users. Studied shows the history of development of assistive technology for physically challenge users. They highlighted how technology has changed the life of physically challenged users. **Pradhan and Samanata (2018)** Investigated use of assistive technology in special school in Burdwan and Medinipur division of WB. Study shows that Special school have increased the use of assistive technology for differently abled students. Authorities must take initiatives for proper facilities of physically challenged users. Only few institutions have sufficient assistive technology for their students. Special schools are suffering from lack of funds. **Chaurasia, Abhay and Singh, Ajay Pratap (2019)** Highlighted the software and hardware technologies use in library for providing services to the physically challenged students. Research emphasis technology, equipment that create a barrier free

environment for physically challenged users. Study shows the Indian as well as international scenario of assistive technology use in library and information centre. **Harvey, Aubrey and others (2016)** Investigated the provision of library service to the people of Malawi. Study highlighted the lack of LIS services to the disabled people and shows the possible barrier. Study suggested that more braille related equipment should be procured for physically challenged users. Library should take necessary step to address the issues for physically challenged students.

3. Methodology:

Some the recent and relevant studies have been reviewed. For the present study interview has been conducted with the librarian of some of the prominent library for getting exact information about various tolls used in the library for differently abled students.

4. Definition of Disability:

The oxford dictionary defined disabilities as a “physical or mental condition that means you cannot use a part of your body completely or easily or you cannot learn easily”

WHO (2022) Define disabilities “as an umbrella term, covering impairment, activity limitation and participation restriction. Impairment are problems in body function or structure which activity limitation are difficulties encountered by an individual in executing task or action”

5. Population of Disabled peoples in India

As per 2011 census there are 2.68crore person are disabled people out of total 121 crore population which is the 2.21% of the total population. Among the disabled people 56% (1.5 crore) are male and 44% (1.18%) are female. Most of the disabled people are live in rural areas (1.86 crore) and 0.81 crore live in urban area.

6. Types of Disability

Right of person with disabilities (RPwD) act 2016 cover the following type of disabilities

6.1 Physical Disability (Locomotor Disability)

- Disability with Leprosy Cured person
- Cerebral Palsy disability
- Dwarfism
- Muscular Dystrophy disability
- Acid attack victim

6.2 Visual Impairment

- Blindness
- Low vision

6.3 Hearing Impairment

- Disability with Deaf
- Hard of hearing disability
- Speech and language disability

6.4 Intellectual Disability

- Specific learning disability
- Autism spectrum disability

6.5 Mental Illness

6.6 Disability caused due to chronic Neurological Condition such as

- Multiple sclerosis disability
- Parkinson's Disease disability

6.7 Blood Disorder

- Haemophile

➤ Thalassaemia

7. ICT enabled assistive technology application in the library for disabled users.

The Government and its machinery are primary responsible for providing equal access to the information to all the citizens. Differently abled students in the library need to be care separately as they need special assistance to execute the same work. Library has important role in providing equal access to the information to all its users irrespective of their differences. With the help of ICT library can provide better services to the differently abled users to enhance the information access and their personality development. Government has the responsibility of providing education to the mass and play important role identifying and eliminating the barriers for physically challenged pupils. Govt. should encourage physically challenged pupils to adopt ict based assistive technology for their daily life. Following are important ICT based assistive tools used in the library for disabled pupils.

8. Screen Reading Software:

Screen Reading Software is one of the important tools for visually challenged users. With the help of this tools visually challenged users can read the text, image. Free and open-source screen reader NVDA, NV Access and commercially Jaws (Job access with open speech) are important software. Other important screen reader software is open book, zoom text, voice over, ORCA, web anywhere.

9. Screen Magnification software:

Magic screen magnification software allows users to customize the monitor, view, it allows users to enlarge screen, from 1.1 to 36 times which help to the low vision.

10. Low Vision Device Kit:

It is another useful device for visually challenge users. Optical and non-optical vision tool are easy to use and relatively in expensive.

11. Spectacles:

11.1 Prismatic spectacle 10D: These spectacles allow visually challenged users to read with both eyes at the same time. The Lense is 20mm high and 35mm wide. It is very light and break resistant. It is available in different variant 4D, 6D, 8D,10D,20D.

11.2 Aspheric Spectacle 20D:

It another spectacle specially recommended for monocular vision. It is available in two power 20D and 16D.

12. Different size of lenses

- Fresh book magnifier
- Hard held magnifier
- Pocket magnifier

13. RuBy (Video Magnifier):

It is hand held magnifier small in size, and very light in weight. By applying this tools student can read and view documents of their choice. It is helpful for brail reading, bills, letter and receipt. Etc.

14. Key board learning software:

This software is designed for visually challenged people to learn computer keyboard. Users can use ten finger to learn the keyboard which are specially designed.99 types of lesson have been included in this software.

15. EL Brail notes taker Machine:

It is specially designed for brail person. It is easy to take anywhere. It has friendly 8 dots keyboard and blue tooth 401, USB-e connectivity. This machine is feature with a braille display provision of braille keyboard, latest windows, K, Jaws v17, 64Gb internal memory, 32 GB SSD, Blue tooth, Wifi,

16. Kibo XS device:

It is another important device that help visually impaired students. With the help of this device text book can be converted into audio form which help to the visually students to understand the text easily. There are 11 languages in which this device translates i.e. Hindi, Punjabi, Gujrati, Marathi, Malayalam, English etc.

17. Pearl camera:

Pearl camera is important tools for the physically challenged users. Monitor sensor is attached with the camera that allow users to read quickly. Some of the important features of this camera are Plug, play USB with Jaws software, motion sensor, scanning pages 20 at a time etc.

18. Jaws:

Jaws is the popular software for visually challenged peoples. It helps to read computer screen with text to speech output result. The software is very helpful for blind students to run computer without anyone's assistance.

19. Sparsh:

Sparsh is very smart software for visually challenged students. It supports eight different languages besides English. Software can translate screen text into Bharti brail. It has facility to the documents, and can printed using brail printer. It has the facility of reverse translation from brail to screen text.

20. Sanyog:

It is another important software developed by IIT Kharagpur for speech impaired students. Through this tool physically challenged student can represent themselves by using icons and image then take these to form correct sentence in English language as well as other Indian languages.

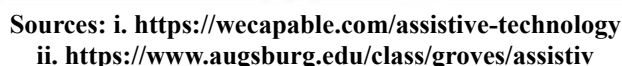
21. Assistive tools for hearing impaired:

Z4 mobile application is an important app for hearing impaired students. The app helps the physically challenged users to interpret with video season. The interpreter interprets the sign language to the hearing-impaired audiences.

22. Assistive tools for speech impaired:

Prologuo2go is a popular app for speech impaired students. The app use picture in the place of word. Users chose the picture which represent the most appropriate word. These pictures symbolize different noun, verb and phrase which help to express the speech impaired students. Tap to talk is another important tool for speech impaired peoples. It converts the image into voice to help the users with speech disabilities. Aap like speech with milo, speech hang man, Tiga talk speech therapy games allow students to practice and speak with others.

Image: 1. Various type of assistive tools used by differently abled users.



8. Hasselbring, T. S., & Glaser, C. H. W. (2000). Use of computer technology to help students with special needs. *The future of children*, 102-122.
9. Kiruki, B. W., & Mutula, S. M. (2021). Accessibility and usability of library websites to students with visual and physical disabilities in public universities in Kenya. *International Journal of Knowledge Content Development & Technology*, 11(2), 55-75.
10. Murugan, M., & Jaishankar, R. (2021). Problems Faced by Physically Challenged Students in Accessing and Utilizing the Library Resources and Services of College Students in India. *Productivity*, 61(4), 470-484.
11. Pradhan, S., & Samanta, M. (2018). Use of Assistive Technology in blind schools of West Bengal: A comparative study. *Library Philosophy and Practice*, 1.
12. Sanaman, G., & Kumar, S. (2014). Assistive technologies for people with disabilities in national capital region libraries of India. *Library Philosophy and Practice*, 0_1.
13. Seale, J. (2013). *E-learning and disability in higher education: accessibility research and practice*. Routledge.
14. Sharma, F. R., & Wasson, S. G. (2012). Speech recognition and synthesis tool: assistive technology for physically disabled persons. *International Journal of Computer Science and Telecommunications*, 3(4), 86-91.
15. Soman, V. S., & Sudhier, K. G. (2021). Assistive Technologies for Physically Challenged Students in Kerala: a study on user's awareness and perception.
16. Tripathi, M., & Shukla, A. (2014). Use of assistive technologies in academic libraries: A survey. *Assistive Technology*, 26(2), 105-118.
17. Viner, M., Singh, A., & Shaughnessy, M. F. (2020). Assistive technology to help students with disabilities. *Special education design and development tools for school rehabilitation professionals*, 240-267.