THINK INDIA JOURNAL

ISSN:0971-1260
Vol-22-Issue-14-December-2019

Application Information And Communication Technologies In Lives Of Visually Challenged People: A Descriptive Study

Yaseen Anwar Basha Sk
Ph.D (Journalism and Mass Communication),
Shri JJT University, Jhunjhunu

B.K. Kiran Kumar
Assist Professor, AISFM

ABSTRACT

The study analyzes the kinds of changes Information and Communication Technology (ICT) brings in terms of work and leisure in the lives of the visually challenged The study examines how ICT enhances access to information and expands the educational and employment opportunities that are available to the visually challenged Limitations of accessibility to information due to economic constraints and unavailability of infrastructure for many have been taken into consideration. A description of the kind of technology and software applications currently available to the visually impaired has been undertaken. The study employed interviews in coming to its conclusions. The study has found that while ICT as an enabling technology for the visually challenged needs to be promoted, it is also important to enhance general purpose IT stills among them, so as to encourage the visually impaired to play an active role in the mainstream. The study has found that a major limitation of ICT from this perspective is that ICT tools are still not equipped to facilitate accessing information that is available in regional languages.

***Key Words**: Mass media technologies, information and communication technologies, Visually Challenges people, Digital revolution, New Media Technologies.*

Introduction

A visually impaired person is a person who cannot see properly. The presence of visual impairment in a person limits the access of information and communication. Technological advances have broadened the horizons of communication which demands new knowledge and skills. Technological advances and creation of assistive technology tools for disabled gave them access of information and allows them to actively participate in their home, schools, and work environments.

Invention of computers, internet and developments in information and communication technologies[1] (ICT) have brought qualitative changes in life, pattern of work and leisure of visually challenged.

The digital revolution has made some of these information exchange applications available to visually challenged for the first time. For example, it is now much easier for them to study in regular education institutes, to read the latest news papers and magazines, to cast their votes and to communicate with the rest of the world browsing internet, etc. Indeed information and communication technology is empowering visually challenged regardless of the intensity of the disability (blind/ low vision) provides greater control over their lives and allows them to more fully participate in their environments. Around the world, there are lakhs if of visually impaired people at decision making positions who continue to excel in various walks life with the help assistive devices. The study examines how ICT enhancing access of information. educational & learning, employment opportunities, what kinds of changes ICT brought in lives of visually challenged in terms of work and leisure, and limitations of accessibility of information due to economic constraints, availability of infrastructure etc.

[1] According to UNESCO, diverse set of technological tools and resources used to transmit, store, create, share or exchange information. These technological tools and resources include computers, the Internet (websites, blogs and emails), live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting, audio and video players and storage devices) and telephony (fixed or mobile, satellite, visio/video conferencing, etc)

Copyright ⓒ 2019Authors

ISSN:0971-1260
Vol-22-Issue-14-December-2019

In older days Braille is only one option to access information for visually challenged people. Braille is a expensive and time-consuming. Braille devices such as Braille printers and Braille displays are costly. In many cases, synthesis appears to be an attractive alternative. Before invention of ICTs Braille was a fundamental means of communication and played a important role in the process of intellectual development visually challenged. During mid 1980's, the capturing of information was one of the major constraints in making information accusable in Braille and other suitable formats. Word-processors and desktop publishing application were not used as widely as we are using today. For years, visually impaired have been able to command the user interfaces of computers using screen readers, speech synthesis, Braille displays and screen magnification systems.

Furthermore, the visually challenged people have access to the various b software applications, personal productivity tools, electronic mail systems and web-browsers. Using enabling technologies in combination with general-purpose computer systems, the blind and partially sighted have been able to transform information from formats aimed at the sighted into formats more suitable to meet the needs of the visually impaired. Enabling technologies for such automatic transformation include Braille translation systems, screen magnification systems and text-to-speech engines.

The revolutionary changes of technology is now rapidly leading us to a new concept of an Information Society, where people with different abilities, requirements, educational and cultural backgrounds and preferences, will need to perform, in the context of their everyday life activities, multi-modal interactions with multi-media application. This technological development offers and new opportunities for all individuals in society, including the persons with disability. Latest developments in Information and communication technology have played a catalytic role in recent developments lives of visually challenged people. These technologies are helping visually challenged for independent living by providing inter-personal communication, education, , employment, recreation, and etc.

Statement of issue

There are lakhs of people in visually impaired in India, in the rural areas; there are 22 blind males and 28 blind females in a population of 100,000. 15 males and 25 females in a population of 100,000 in urban areas. The number of the visually chalked people in India is estimated to be 13 million and this is a growing figure. And we in our society treat them very low and have a wrong notion of them being a burden to the society. We in our surroundings see thousands of people who are disabled in various forms. Out of them some are visually impaired. We tend to see how the information communication technologies are enhancing accessibility of information, educational and employment opportunities. The visually impaired persons are taking up the challenge of using the ICTs in the field of education job works and other related day- to- day personal life. In primary research we found that helping a lot in communication and made them independent. Other side the software applications available in market can scan, read and speak English and other foreign language scripts. These can't read Indian regional languages scripts. Technology available is not reaching raral areas. Affordability is a major problem. Whatever available software's are very costly. These software can't scan old prints. Although enabling technologies developed especially for people with special needs represent powerful tools, these enabling technologies are typically developed using proprietary technology.

Objectives of the study

Main objective of the study is examines the role of ICTs in the Lives of visually challenged people, describes how ICTs are helping visually challenged people in various aspects of life and how ICT enhances access to information and expands the educational and employment opportunities to the visually challenged people.

Methodology

 Copyright ⓒ 2019Authors

ISSN:0971-1260
Vol-22-Issue-14-December-2019

We employed qualitative techniques: interviews for study. The study gathered information from experts in field from LV Prasad Eye Institute. We also referred to five visually impaired people from different age groups and professions who are familiar with information technology. Among them 3 are blind and 2 low vision persons. The interviews were conducted through interview schedule. The interview schedule consists of questions such as" when did they start to using the computer?, What do you use it for?, What problems have they faced when starting to use the computer?, or what purpose do they use computer and tools of ICT whether academic purpose or net browsing etc,. Do they have any special suggestion regarding hardware tools and software applications? What changes do they see after using computer in their activities?

Access of information

Visually challenged people can access information through enhanced image, Braille, synthetic speech and optical character recognition. These devices can be used either separately or combining with personal computers. Any computer when coupled with a voice synthesizer and with suitable software transforms itself into a full- fledged talking machine. The information displayed on the computer screen can be spoken. A scanner attached with computer acts as reading machine. One can navigate the screen and also move to any part of the screen and read the contents. By combining appropriate device and software a computer transforms talking machine and reading machine.

Hardware devices and Software programs

CCTV MagniSite - It is an electronic enlarging device which magnifies whatever image is being viewed by the camera unit, enhanced image devices provide a method of accessing printed information. or personal computer through enlarging hardware and software application. Cloosed circuit televiision (CCTV) is used for print information.

Braille offer a major advantage over speech programs by allowing the user to immediately learn the format of the data on the computer screen. When proofreading, catches misspellings, extra spaces between words. This program Provides speech technology that works with computer operating system to provide access to software applications and the Internet. JAWS also outputs to refreshable Braille displays, and will "talk" immediately during operation. This program announces each time a new window is opened or closed, and whenever it gets the focus. The PC cursor tells user where he is typing on the screen, menu item selected, etc. The JFW cursor acts like the Mouse cursor.

VERA – is software application stands for Very Easy Reading Appliance. VERA allows user to read books, papers, recipes, personal correspondence, etc. It will read loudly to user. User also can look on the optional VERA display screen.

OPEN Book - Software offers access to read, edit, and manage printed information, by scanning and converting it to digital information. This information is then read by the included software voice synthesizer or through a customizable screen display.

Zoom Text - Designed for the low-vision people. It offers integrated magnification and screen reading can speak all on-screen text, echoes typing and automatically read multi-page documents.

MaGic – It is a screen magnification software that magnifies computer screen from 2 to 20X and is ideal for low-vision users. It will enlarge text and images on the screen.

Duxbury- is Braille editing and translation software application. It is easy to use and is compatible with speech and braille output.

Kurzwcil - is a software works on computer and a scanner to convert the printed word into speech. It has the ability to fund key words or phrases within a document, editing of scanned text, magnification of scanned documents to accommodate users with visual impairments, and the ability to specify bookmarks within a document.

MOS stands for Mobility Assisting Software that takes the individual on an auditory journey. The user needs to inform the program where he is and where would like to go. The software maps out the best route leading to destinations. It prepares a detailed auditory map, speaking out important landmarks and details of the route.

Key Board: Computer keyboards are made accessible serve to visual impaired. Computer keyboards have raised dots on the letters "F" and "J" and on the number "5" on the

 Copyright ⓒ 2019Authors

ISSN:0971-1260
Vol-22-Issue-14-December-2019

numeric keypad. These raised dots guides visually challenged people to identify letter and numbers of a key board.

Analysis

The ICTs have made visually impaired independent. They no need to depend on other family members. Mother of a visually impaired child Venkatesh said,

Technologies are now allowing people with disabilities to participate in society more fully. The computer has made things much easier for me. Before I used to spend more time with my son teaching lessons every day. But now the computer dose every thing. I am spending less time than before, now he can do things on his own like reading writing and even playing games on his computer

ICT have brought qualitative change in thinking attitude of visually impaired persons and persons associated with them. Ms. Supriya said

IT developments make it possible for more people with disabilities to realise their educational and employment aspirations. Students are able to accomplish a greater range of tasks independent of physical assistance from others, and are able to enter a greater number of academic fields with increasing success.

ICTs are not a substitute to old ways of access of information. Mr. Hemachandran said that

"Computers provided to me a lot of information about out side world. ICT can not really substitute to brailee ICT made us to became passive reader. ICT plays a significant role in the process of intellectual development no doubt, but it is making to a active listener than active reader. We can get feel while reading on Braille, but not in listening to computer."

Application of ICTs assistive technology is more beneficial and cost-effective alternative, to traditional adaptive technology which visually impaired are using. One respondent Mr. Srinu informed "Before the computers and softwares application were introduced to me, I used to record the lessons in audio cassettes with help of friends and listen to the subject through the tape recorder", Which was more time consuming and laborious and had to take the helping hand of others But after the computers were introduced I am able to do things independently. I am to reading news from websites. He further said I am scanning text books in through computer and listening through kurzweil software. Ms Supriya also expressed similar opinion as Srinivas expressed. The computer can also be used as entertainer for children. Master Venkatesh said. "I play games soon after finishes my home work. I fire crakes (game) on computer."

For visually impaired people the Internet is a revolution. Surfing the World Wide Web opens up resources not previously available: to read newspapers, to read the phone directory, to send mails everything is any thing they can do. Mr Hemachandran said, I am introduced to the computer in my university level. I am using the computer for sending and receiving mails and also to read some documents. I like to write letters to friends. I can write in Braille but my friends cant read. Really interne made true my likes. Now I am able to read news papers, any thing I can Know. It is making me more and comfortable and confident. Software applications available in market are can scan English and other foreign language script It cant scan Hindi. Khaleel said " the computer is useful for me in only sending and receiving mails but it is not useful for me in my academic purpose. Research should be done in this regard.

Through interviews this research study found advantages and challenges ICT applications for empowerment of visually changed people. Unavailability of infrastructure and software's are major problem. Software application which are useful is not available semi urban and rural areas. Sreenivas said. "I don't know all these technology before coming to university. I come from a small town. I never heard, never thought never imagined this kind of adaptive technology while graduating. I couldn't have got acquainted with ICT If I would not have got seat in HCU. Persons who want to get access information from regional script. It is not possible. Affordability also major challenge. Common people can't purchase computer system and software applications. Indian Institution Technology Madras is developing multi lingual editor. It may resolve all the problems of accessibility.

No doubt ICT has enhanced the accessibility, employability and educational opportunities to the visually impaired. But there are a number of factors affecting access to IT

 Copyright ⓒ 2019Authors

ISSN:0971-1260
Vol-22-Issue-14-December-2019

for people with disabilities. The first is cost, both of the equipment itself and the necessary adaptations. Then there is the ongoing cost of accessing certain services like the Internet. They are therefore disadvantaged from the outset in gaining access to ICT. ICTs are not accessable to many people due to financial and other constraints. Government agencies are responsible for setting up infrastructure and funding special allocation to visually impaired people.

Conclusion

Despite the barriers, there are more people with disabilities in the country than the visually impaired people who are equipped and ready to compete in an educational, social or employment setting may now do so in a computer based environment without the disability being known to other users Computer Conferencing and the Internet are two technologies that permit genuine mainstreaming in both employment and academic environments. Braille is t costly and time-consuming. Braille is a fundamental means of communicating and plays a significant role in the process of intellectual development: The Impact of Information Technology on People With Disabilities One segment of the population that may have benefited from the advances made in IT more than any other is people with disabilities. Technological advances and the continuing convergence of computing and telecommunications are reducing bathers, but for many people with disabilities the ict is more profound. The ever-increasing range of assistive devices, from low-technology self care mobility devices through to high technology 'smart homes,' are all contributing to minimizing and managing the effects of a 'disabling condition. It is therefore important to examine the social barriers to greater participation and opportunity in tandem with advances in technology. The impact of ICT on people with disabilities is and will be, dramatic and far reaching. 'Therefore, it is imperative that the issues surrounding IT and disability be examined and understood so that steps may be taken to make the appropriate tools of IT available to people with disabling conditions so they can take their place in and contribute to society as equal and independent citizens.

References:

1. Coombs, N Disability and Technology: Historical and social perspective, Rochester Institute of Technology, USA 1990
2. Collins B Disabling barriers: Exploring Disability; A Sociological Introduction.
3. Light up News letter, 10 April 2003 a publication of Vision Rehabilitation Center, L.V. Prasad Eye Institute
4. Spandana parents news latter 11 August 2003, Dr. KRP Prasad center for Rehabilitation of Visually impaired people.
5. http://uis.unesco.org/en/glossary-term/information-and-communication-technologies-ict, accessed on 10th Nov 2019

Copyright ⓒ 2019Authors