

# ROLE OF TECHNOLOGY IN EDUCATION FOR VISUALLY IMPAIRED

MANISH KUMAR<sup>1</sup>

<sup>1</sup>Assistant Professor, Department of Social Work JRH University, Chitrakot, U.P. INDIA

## ABSTRACT

*According to WHO action plan 2006-11 estimates 10 percent population of the world is facing some kind of disability. the meaning associated with disability is different. Global burden of disease, (GBD) looks disability as a loss of health where health is conceptualized in terms of functioning capacity in a set of the health of health domains such as mobility, cognition, hearing, and vision .The number of persons with disability in continuously increasing because of growth of population, the emergence of chronic diseases and medical advances that preserve and prolong life, creating overwhelming demands for health and rehabilitation services (Srivastava and Khan 2008). In South-east Asia, the prevalence of disability ranges from 1.5 - 21.3% of the total population, depending on the definition and severity of disability (Mont 2007). Despite the increase in the prevalence of disability worldwide, due to various reasons, not much attention has been paid to its evaluation, management, and prevention (WHO 2002). This paper focuses on a different model of disability to understand this concept. It looks at poverty as the reason for disability. Further, it discusses various policies for disability in India for education, employment, and rehabilitation of persons with disability. keeping the focus on education, in the second part paper takes visual disability and examines how the assistive technology played its role in the education of students of visual impaired at the school level. also, it observes the amic prospective of students about there inclusion in society through the lens of assistive technology and access to social networking websites.*

**KEYWORDS:** *Visualy Impaired, Technology, Education*

## INTRODUCTION

Society is a complex web of structures. Individuals from a part of the society and their very own existence. Their identity is dependent on the society that they collectively create. Despite this collective effort, the society has never been an egalitarian institution. Resources in society are unevenly distributed due to hegemonic nature and mostly it is people with different abilities who have to bear the brunt of it. This exclusion is often a result of hierarchies, superstitions, myths that lead to various forms of discrimination. People with visual impairment form a part of this marginalized community and often lose out even on their basic rights because of the exclusionary constitution of this institution.

Education is helping in changing this grim scenario, especially for people with visual impairments. It was the inception of Braille, named after its creator Louis Braille, which brought about a revolution in the education sector and made it accessible to visually challenged persons. Ever since technology has been a tool for the emancipation of visually challenged people. In modern times, irrespective of the countless obstacles in their way, more and more visually

challenged people are entering the domain of education and academics with technology as their aid.

The individuals with visual impairment have not been treated equally by society. The society has deliberately kept them away from the mainstream and has never provided them the opportunities to prove their potential (Raut, 2009). This exclusion has been done by creating special institutions and special tasks for them. They have been confined to certain occupations like making candles, chairs and like. This hegemonic nature of society has kept them from availing their privileges.

In the context of vision defects, a variety of terms namely, totally blind, stone blind, blind, partially blind, legally blind, visually limited, low vision, partially sighted, visually handicapped and visually impaired are used. Visually impaired is an umbrella term, used widely and understood in an educational context which covers all the aforementioned. In the case of persons with a complete lack of vision or who have light perception only, the term 'blind' should be preferably used. For people whose visual acuity falls between 6/18 and 6/600 in the better eye after the best possible correction, the term 'low vision' should be used

(Rama Krishna T. and Armstrong, 2009).

Technology, a word which assists us in all walks of our life. it eases and increases our efficiency and efficacy. It paved a single platform for all human beings including persons with a disability without discrimination. Presently, visually challenged are highly benefited with technology. There is various software available across all platform for assisting them in education, employment, surfing the internet, booking a ticket, banking transaction and many more but the only thing they need is screen reader software installed in the device. Similarly, there are various devices available for making them independent such as white cane for walking, talking thermometer for counting temperature, Braille printer/embosser for printing text in Braille, talking ATM for the transaction and so on.

### **LEGAL PROVISIONS ABOUT EDUCATION FOR PERSONS WITH DISABILITY**

“Education must aim at giving the blind child knowledge of the realities around him, the confidence to cope with these realities, and the feeling that he is recognized and accepted as an individual in his own right.” - Berthold Lowenfeld.

The preamble of the Indian constitution ensures equal treatment with all citizens of the nation including persons with disability and other marginalized groups. It includes social, economic and political justice, equal opportunities in all spheres. The directive principle of state policy embodies the state is a welfare state it shall strive to ensure the welfare of the people by securing and protecting as it may. The state shall, within the limits of its economic capacity and development, make effective provision for securing the right to work, to education and to public assistance in cases of unemployment, old age, sickness and disablement, and in other cases of undeserved wants. (section 41, directive principle) the state shall provide free and compulsory education to all children until they attain the age of 14. (section 45, the directive principle of state policy). Persons with disability 1995 put one step further and mandates free education to all persons with a disability up to the age of 18 years. Despite all provisions enrolment of visually Impaired is only 5 percent. Educating visually challenged is considered a welfare activity in a country where education is a fundamental right. The act encourages the promotion of integrated, residential education, non-formal education, and functional literacy. It desires education through open schools and universities by ensuring 3 percent (now 4 percent) and initiation of research for

designing and developing new assistive devices and developing human resources. There is a various emphasis on education of disabled by various committees such as Everyone including a child with a disability has the right to education (Universal Declaration for Human Rights, 1948). The education of children with disabilities should be inseparable part of the general education system Indian Education Commission, 1964-66) Every effort should be made to develop integrated programmes enabling the children with disabilities to study in regular schools National Policy on Education, 1967) The child with disability will enjoy all the rights enjoyed by everyone else (U.N. General Assembly Declaration on the Rights of Persons with Disabilities, 1975) Every effort should be made for wider expansion of education for children with disabilities (National Policy on Education, 1979). Special assistive devices and equipment should be provided for children with all categories of disabilities for their placement in regular schools (Working Group Report on Education of Children with Disabilities, May 1980). Every individual regardless of individual differences has a right to education World Conference on Education for All, 1990) Education of persons with disabilities is an integral part of the education system (UN Standard Rules with Equalization of Opportunities for Persons with Disabilities, 1993). All the pre-primary and primary schools should be strengthened in terms of trained manpower and facilities to enroll children with disabilities (Rights of Children with Disabilities, NIPCCD, 1999)

The inclusion of persons with disability in the mainstream of society through inclusive education is necessary. It will facilitate a platform for PWD by imparting education in ordinary school. The fundamental principle of Salamanca framework for action, article 7 states an inclusive school is where children will be educated together. The school will recognize the diverse needs of students by accommodating appropriate facilities, appropriate curricula, organizational arrangements, teaching strategies, resource use and partnership with committees. Continuum support is necessary for children with special need. According to Johnson “It is a flexible and individualized support system for children and young people with special educational needs because of a disability or for other reasons). It forms an integral component of the overall education system, and is provided in regular schools committed to an appropriate education for all.” According to United Nations Special Rapporteur on Disability amply clarify the concept of inclusive education UNESCO, 1998 by Benguet Lindqvist “It is not our education systems that have a right to certain

types of children. It is the school system of a country that must be adjusted to meet the needs of all children". Rights for persons with disability act, 2016 ensures special focus on education of PWDs. Educational institutions shall:

(i) Admit them without discrimination and provide education and opportunities for sports and recreation activities equally with others;

(ii) Make building, campus and various facilities accessible;

(iii) Provide reasonable accommodation according to the individual's requirements;

(iv) Provide necessary support individualized or otherwise in environments that maximize academic and social development consistent with the goal of full inclusion;

(v) Ensure that the education to persons who are blind or deaf or both is imparted in the most appropriate languages and modes and means of communication;

(vi) Detect specific learning disabilities in children at the earliest and take suitable pedagogical and other measures to overcome them;

(vii) Monitor participation, progress in terms of attainment levels and completion of education in respect of every student with a disability;

(viii) provide transportation facilities to the children with disabilities and also the attendant of the children with disabilities having high support needs.

**The appropriate Government and the local authorities shall take the following measures for the purpose of section 16, namely:—**

(a) To conduct a survey of school going children in every five years for identifying children with disabilities, ascertaining their special needs and the extent to which these are being met:

Provided that the first survey shall be conducted within a period of two years from the date of commencement of this Act;

(b) To establish an adequate number of teacher training institutions; (c) to train and employ teachers, including teachers with a disability who are qualified in sign language and Braille and also teachers who are trained in teaching children with intellectual disability;

(d) To train professionals and staff to support inclusive education at all levels of school education;

Measures to promote and facilitate inclusive education.

• SEC. 1] THE GAZETTE OF INDIA  
EXTRAORDINARY 9

(e) To establish an adequate number of resource centers to support educational institutions at all levels of school education;

(f) To promote the use of appropriate augmentative and alternative modes including means and formats of communication, Braille and sign language to supplement the use of one's own speech to fulfill the daily communication needs of persons with speech, communication or language disabilities and enables them to participate and contribute to their community and society;

(g) To provide books, other learning materials, and appropriate assistive devices to students with benchmark disabilities free of cost up to the age of eighteen years; (h) to provide scholarships in appropriate cases to students with the benchmark disability;

(i) To make suitable modifications in the curriculum and examination system to meet the needs of students with disabilities such as extra time for completion of examination paper, facility of scribe or amanuensis, exemption from second and third language courses;

(j) To promote research to improve learning; and (k) any other measures, as may be required.

**ASSISTIVE TECHNOLOGY**

Above mentioned phrase "children with special need" requires some assistance to complete education.

The idea of inclusive education should be appreciated but it is nothing if the requirements of these groups are inadequate. Therefore, modern technology has been an effective tool to achieve this goal. In last few years Screen Reading Software, Text Reading Machines, Talking mobile phone, Drawing Boards, Geometric Kit, Cassette Recorder or a Digital Recorder, etc., brought revolutionary transition in the life of visually challenged. They can independently read and write in the format commonly used, Use voice and text communication tools such as e-mail, web chat, internet telephony and instant messaging, Use the Internet for all the purposes that it offers such as reading newspapers and magazines, Internet banking, online shopping, etc., access to dictionaries, encyclopedia, telephone directories, etc.

Screen reader software provides spoken facility on the computer for visually challenged. Jaws for Windows

from Freedom Scientific USA, Window-Eyes from GW-Micro USA, Hal from Dolphin UK, Look Out by Premier Programming USA, etc., are screen reading software's that use text-to-speech engines such as Eloquence by Eloquent Technology, Microsoft speech from Microsoft, Flex Talk from ATNT, Deck Talk Access from Digital Equipments, etc., to provide speech output. Screen reader software determines what to read and text to speech (TTS) converts text into spoken word. Pronunciation of text, quality of speech output and voice entirely depends on text to speech engines. TTS is also used in computerized telephonic inquiry and announcement. Both software work with a tandem.

Screen magnification software enables persons with low vision to access the computer. Though windows provide magnification facility it is not sufficient. It does not only increase text but also any and every part of the screen. It also uses speech output. Keyboard and mouse are used for input. Magic by Freedom Scientific USA, Zoom Text by Ai-Square USA, Lunar by Dolphin UK are some of the examples of screen magnification software.

OCR and scanner assist visually challenged people to convert printed material into digital form. It is scanned by the scanner and recognized by OCR (Optical character recognition) software. It is read by screen readers. Kurzweil 1000 by Kurzweil Education Systems USA, Open Book by Freedom Scientific USA, and Complete Reading System by Premier Programming USA are a few examples of special OCR software made for the blind. Omni Page Professional, Text Bridge, and Fine Reader are the examples of general-purpose OCR software's which can be used by blind persons with the help of screen reading software.

Refreshable Braille display is a hardware device. An alternate output device for text to speech engines. It shows one line information sent by screen readers. It comes in cells of 20, 40 and 80. Braille displays are not used frequently in developing countries because of the high cost. Alva Delphi Multimedia & Alva Satellite by Alva Access Group, Braille Stars by Pulse Data Human Ware, Braille Ellex by Paper Meyer Company Germany Power Braille by Freedom Scientific, Vario by Braum Germany are a few examples of Refreshable Braille Displays.

Braille note taker is a hand-held device. It has long battery back up. for input, it uses either Braille or QWERTY keyboard and voice or refreshable Braille for output. it can be connected with the computer for file back up. These devices have built-in packages for word-processing, spreadsheets, address book, clock, calendar, e-mail, internet

browsing, etc. note-takers can be connected to a modem for internet browsing and Braille embossers. It is very useful for visually impaired in integrated education and works environment. Aria by Robotron Australia, Braille Desk 2000 by Arctic Technologies; Braille Lite Millennium, P ACmate, Type n' Speak, Type Lite, Braille n' Speak by Freedom Scientific; Braille Note & Voice Note by Pulse Data HumanWare; Braille Elba by Papenmejer Germany; Trans Type 2000 by Arctic Technologies are a few examples.

Voice diary, a small hand-held device which allows users to store data in recorded audio. Speech recognition allows the user to search data stored in the device. It contains multiple application such as appointments, calendar, clock, calculator, address book and note-taker. Voice Diary by Voice Diary Ltd., Israel, and Voice Make by Parrot France are available models of this device.

Braille versus other assistive technologies a different approach is taken by Weikle and Hedadian (2004) argue that the use of technology many disabled children unable to develop required literacy skills. Overreliance on technology also declines skills. Educator use technology as a primary mechanism rather than supporting mechanism affects their teaching of literacy skills. Gale (2001) argues. It teaches listening skills to oppose desired reading skills. Australian Braille authority (1999). Schools of researchers consider technology as a viable mechanism to support the learning of visually challenged. The inability of students to access technology is a problem which causes fall of their standard, not assistive technology. Abner and Lahm (2002). Lack of education amongst teachers regarding the provision of "dynamic training" incorporating assistive technology. Kentucky (US study).

## RESEARCH METHODOLOGY

### Research Design:

**Descriptive Design:** it is a quantitative study where the researcher used a descriptive design for study. The study has focused on views and perception of students of vision impairment about the significance of technology in their education.

### Sampling Technique:

**Purposive:** I collected data from four blind schools in Delhi. My sample size was 80 I have collected 20 samples from each school. I have used purposive sampling techniques for my study.

### Location of study Delhi:

study had been done in four blind schools in various parts of Delhi. These schools were:

- J.P.M. Senior Secondary School., Lal Bahadur Shastri Marg, New Delhi.
- Amar Colony Andh Vidyalaya Lajpat Nagar.
- Janta Aadarsh Andh Vidyalaya Shadig Nagar
- Balsadan Blind School, Kingsway Camp.

#### Source of data collection:

- Primary and Secondary
- Primary data was collected from respondents of four blind schools in Delhi.
- Secondary data was collected from books, journals, various studies, and internet.

#### Tools for data collection:

**Interview schedule:** I used an interview schedule for my data collection. I asked questions directly from the respondents. Assistive devices used during an interview for the future. Respondents were only male students from 9 to 12 standard. Hindi and English language used for the interview.

The interview schedule was translated in Hindi for the respondents. Interviews were taken in Hindi and then it was translated into English.

**Plan for data analysis:** Data analysis was done in Microsoft Excel 2007.

#### Data analysis

The study was done in four blind schools in Delhi with the students of 9 to 12 standard. It has done in headings as socio-demographic profile, assessing the role of assistive technology in education and its significance in social inclusion.

#### Socio-demographic profile:

The age of these respondents depicts miserable picture as highest age is 23. It reveals 27.84 percent of students are below 16 years followed by 31.64 percent of them are between the age group of 17 to 18 years. 40.50 percent students are the age of more than 18 years. The reason is respondents belong to the rural area and poor background. Stigma and prejudices block their progress further. Hindi has still dominated language amongst 96.21 percent students and 3.79 percent understand English. The medium of teaching is Hindi in these schools.

The study reveals that 5.06 percent respondents belong to scheduled tribe community. 13.92 percent comes

from schedule caste. 39.24 percent of students are from other backward classes, (OBC). 41.77 percent of students belong to general category. It was observed in the field that most of the students are from the general category. They reside in a rural area. also, they are from the general category but still they are discriminated by the society because of their disability. Respondents admitted that illiteracy still exists in their native place. Poverty is one of the major factors which hinders the participation of the disabled. People who belong to schedule caste and schedule tribe face dual discrimination. The huge population of persons with vision impairment lives in villages. Data says that 65.82 percent dwell in the rural area. Followed by 18.98 percent live in urban area and 15.18 percent come in semi-urban parts of India.

The study further focuses on the educational background of parents which states that 40 percent of mothers are illiterately followed by 26 percent have studied from 1 to 8<sup>th</sup> standard. 29 percent had studied till higher secondary. 2 percent could be graduated and merely 1 percent could reach to master degree. Illiteracy is still prevalent among 40 percent mothers which mean that they are not aware of proper nutrition's. It is understood that malnutrition is the main cause of visual disability. Comparatively, fathers were marginally better.

The illiteracy among fathers is 13.92 percent. 18.98 percent had studied till upper primary. Followed by 48.10 percent had studied till higher secondary. Similarly, 15.18 percent are graduated while merely 3.79 percent had studied till masters.

Poverty in the families can be easily observed. The 60 percent of fathers are selfemployed and they don't have more income. Also, the people who are working in government sectors are on the menial job. Some of them are teachers which mean middleclass family. Rest of them will be count as poor. It becomes another disability for the future of visually challenged students in terms of their education and employment.

Data represents 12.65 percent people are drivers. 60.79 percent people are self-employed. 21.58 percent people are employed in government sectors and 5.06 percent in private sectors. Wherein The only 3.79 percent of mothers work outside of their houses. Amongst them 1.26 percent work in Anganwadi, 1.26 percent is a worker and 1.26 percent is working as a teacher. Rest 96.20 percent are housewives. The data clarify that mothers have still limited work. The study goes in depth to assess poverty. It represents 51.89 percent are between 25000 to 50000. 18.98

percent people are from 50000 to 100000. 10.12 percent people are between 100000 to 150000. 5.06 percent people are between 150000 to 200000. 11.39 percent people are between 200000 to 300000. 2.53 percent people are between 300000 to 350000. Now the poverty of the respondents is clear. If we look this data as monthly income then figures would be more horrible. It means the minimum income is between 2083 to 4166 rupees only while maximum income 25000 to 29166 rupees respectively.

There are thousands of softwares available for visually impaired across various platforms assisting them in accessing books, magazines, journals and so on. Playing music and watching videos. Hence my study explores it's utility in education of school students. There are various equipments used by respondents. Data shows 1.26 percent students use tape recorder. Cd player is used by 25.31 percent. Computer is useful for 1.26 percent students. 15.18 percent students prefer tape recorder and CD player. Similarly 15.18 percent students use tape recorder, CD player and Braille books. Braille books and cd player is useful for 10.16 percent students. 3.79 percent students used Braille books, computer and CD player. followed by 30.37 percent people use all the equipments. This data clears that people are familiar with computer but they can't use it. Respondents gave two reasons. These were poverty and language barrier.

Braille slate is still preferred by blind students as a source of writing. 44.30 percent students used Braille slate followed by 1.26 percent use Braille machine. 13.92 percent students are comfortable with Braille slate and Braille machine. 11.39 percent people use computer and Braille machine. It means computer is still not so used as a source of writing by visual impaired students who are studying from 9 to 12 standard. 29.11 percent people use Braille slate, Braille machine and computer. People prefer Braille slate because they are used to of it. People know about Braille machine but it is not available for everyone. People don't use computer as a source of writing because they are not aware about Hindi font Devnagri. Also most of them don't have knowledge of safe reader which supports Hindi language.

Study represents that 22.78 percent students collect career related information from their teacher. Teachers are main source for them. 3.79 percent students collect these information's from their friends. 6.23 percent students use radio as a source and only 2.53 percent student's use internet. 5.06 percent students said that they ask to the teachers and also brows internet. 11.39 percent said that they ask their friends, teachers and also search on

internet. 11.39 percent student's collect information from teachers, friends, search on internet and listen employment news on radio. 2.53 percent students use internet, talk to their friends and listen radio. Followed by 8.06 percent respondents talk to their teachers and friends regarding employment. 16.45 percent respondents listen radio, talk to teachers and peers. Followed by 5.06 percent believe talking to friends and listening radio and

I. 26 percent talk to teachers and listen radio. Again the use of internet is low because these students are not able to access it easily. Respondents said that they are more comfortable in Hindi that's why they don't use internet. Although hindi screen reader is available but people don't know how to access. Some of the respondents gave other explanations like some websites are not accessible for blind students because it has graphics, frames, and screen readers doesn't support it easily. They always ask their teachers about career. Students are familiar with internet and it's bennifits but usability is still limited. Data shows that

II. 39 percent people use school internet provided by school. 49.46 percent access internet by phone. 2.53 percent use broadband connection. 2.53 percent people go to cyber cafe or other places to access internet. 1.26 percent use internet in school and phone. 25.31 percent access by phone and broadband. 5.06 percent access internet in phone and cafe. It is clear that respondents use internet on phone. It means people keep internet in phone for their emergency. People who use broadband internet they are rich. Their income is high so they are able to afford monthly rent. Study further explores means of self study by the respondents. It says 46.83 percent students use recording devices for study. followed by 51.98 percent study with the help of screen readers. And 1.26 percent respondent use screen reader and magnification software. Those people who use recording devices record lectures in class. Also they copy all study material in their recording device. Those who study with the help of screen readers they copy all the study material in their computer. Some of them who understand English they like to download books from NCERT website and read with JAWS.

During the data collection it was observed that people are very familiar with jaws so that 73.41 percent students use jaws followed by 5.06 percent use Jaws, orca and Nvda. Followed by 18.98 percent are familiar with jaws and Nvda. 2.53 percent students access jaws, orca, Nvda and other screen readers like safe,. Data figures out those respondents are more familiar with jaws because they get this software easily. they know to operate JAWS.

Respondents said that other screen reader's softwares are available but they don't get and don't know to access. Scanning books provides accessibility of printed material on computer for visually impaired students. It is done with the help of scanner and scanning software. Scanner was not available in two schools. Students are aware but very poor in scanning. Study estimates

30.37 percent students are poor in scanning document or do not know to access scanner and scanning software. 24.05 percent have averaged knowledge of scanning softwares. 35.44 percent are good which means they at understand how to operate. 10.12 percent respondents are excellent in scanning. They said that they use it frequently. Students put different opinion about importance of internet in school education. Data says 7.59 percent don't feel the use of internet in education and they don't use it in the purpose of education. 16.44 percent use internet to some extent. 32.91 percent use internet to download relevant materials (respondents said). 43.03 percent respondents always use internet and get its benefits.

Technology has proven it's benefit for all including persons with disability. It had paved path for their education, employment as well as social inclusion. My study tried to explore inclusivity of assistive technology.

Data corresponds that 8.86 percent respondents are not familiar with assistive technology. Vernacular problem becomes a barrier. 20.25 percent people use technical devices and social networking websites to some extent. 60.75 percent use technology invariably to connect to the world. but only 10.12 percent students are frequent user of all devices with no accessibility issue. Study got positive response when it says that 79.74 percent students feel independent because of technology. During interview they said that the arrival of technology has made them independent in now days. They can access internet independently without any assistance of third party. They can book railway ticket and purchase anything by placing order. 20.25 percent respondents don't feel independent because they don't use technology. It further says

81.01 percent students believe in technology and feel themselves in mainstream. They said that technology is spreading across the world and it has made it small. We can communicate with everyone in seconds. I can chat with my family members and friends from anywhere in the world. On the other hand 18.98 percent say that we don't know much technology and we don't use it but it has played an immense

role to connect everyone with the world. It represents 40.50 percent people have very poor accessibility of social networking websites at schools. 39.24 percent said that they access in limit because they get internet for a short time. So they like to browse educational websites. 12.65 percent access social networking website like facebook.

They spend some more time because they like interaction with others. 7.59 percent access these websites frequently and connect to their friends. It also provide educative information.

It also become communication source of the respondents to interact with their family members. 1.26 percent use telephone. 73.41 percent use mobile phone. 12.65 percent use telephone and mobile phone. 5.06 percent use telephone, mobile and social networking websites. 7.59 percent use social networking websites. It was studied that those who use social networking websites have internet in their phone or they use broadband connection at home and their economic condition is better than others.

I also focused on their issues with assistive technology. Only 6.32 percent people face problem with screen readers. 93.67 percent respondents have no problem. They can work on computer well with screen reader. They are only familiar with JAWS. During the interview they said, "whenever we face any problem, we take help from low vision students." it was understood that 7.59 percent people face problem in accessing internet. 92.40 percent respondents are able to access internet easily. students face problem because of vernacular problem inaccessibility of websites and so on. It focused on scanning where 10.12 percent respondents face problem in scanning documents. These students are not familiar with scanner and scanning softwares. 89.87 percent do not have problem. These students know how to scan.

They know all the process but most of them need help from low vision students for setting resolution of scanner and quality of scanning. respondents don't have any difficulty to share information with each other. They use mobile to disseminate information to their peers. They use messaging service. Some of the respondents use facebook and Google group. Only 5.06 percent face difficulty in information sharing and 94 percent do not have any problem

## DISCUSSION AND CONCLUSION

No doubt that technology has improved status of Visually impaired globally. Scenario is changing gradually as they are heading towards big goals and achieving

successfully. According to my study it has to go a long way as school students are not using technology like entire world. Illiteracy amongst parents, lack of awareness, extremity of poverty, poses barrier in their way. Discriminatory attitude of society prevents parents to bring out their children.

Latest assistive devices are far from their of students due to financial problems.

To conclude it is understood that poverty and disability goes together. These students have ability to do better if resources are made available. Government need to form policy so talented students can come out in mainstream of the society. Braille books should be available to them and if not then audible books is must upto secondary education. All university and colleges should upload all necessary books and articles on their website in accessible format. They should use Moodle like tata institute of social sciences and other foreign universities where lectures should be uploaded for future use. All Indian universities and colleges need to be digitized. Students with disability should impart education bilingually in schools. Teachers should be highly trained and aware about PWDs, their special needs and use of assistive technology. Institutions working in this field should come forward. And support this movement. they should take responsibility to spread awareness amongst people which will help parents and coming children immensely.

## REFERENCES

- Census Data.(2001) CD* released by Department of Census, Government of India, New Delhi,
- Department of Secondary and Higher Education, Ministry of Human Resource Development *Annual Report*, Ed. CIL, New Delhi, 2005.
- Disabled Persons in India.(2003) NSS 58th Round* (July – December 2002), Report No. 485, National Sample Survey Organization, Ministry of Statistics and Programme Implementation, Government of India, New Delhi, December 2003.
- Jangira, N.K (1988).; Mukhopadhyay, Sudesh and Rath, K.B. *Survey of research in special education in India*. National Council of Educational Research and Training, 1988.
- Cássia Cristiane de Freitas Alves,1 Gelse Beatriz Martins Monteiro,1 Suzana Rabello,1 Maria Elisabete Rodrigues Freire Gasparetto,1 and Keila Monteiro de Carvalho 1, ‘Assistive technology applied to education of students with visual impairment’, Alves CCF, Monteiro GBM, Rabello S, Gasparetto MERF, Carvalho KM.(2009) *Assistive technology applied to education of students with visual impairment*. Rev Panam Salud Publica. 26(2): PP148–52.
- WiazowskiJaroslaw, ‘Assistive Technology for Students who are Blind or have Low Vision’ Petty S. Linda, ‘*Technology and occupation: High technology vision aids for an aging population*’
- Helen L. Armstrong School of Information Systems, Curtin University of Technology, Perth, Western Australia, *Australia Journal of Information Technology Education* Volume 8, 2009, ‘Advanced IT Education for the Vision Impaired via e-Learning’