

SEDB

Society For
Empowerment
of the
DeafBlind



Independent Living: Communication and Learning

Much of our human experience comes from being with others. For the deafblind, it is the efforts made by others, not just to find ways to communicate, but to act as a medium with which to communicate with others, and the world at large.

However, while this resource is fulfilling and appreciated, there is also the need to be able to develop one's own mind independently, to find ways to absorb information and to inform others, without interpretation by an assistant. Most other people do not learn tactile sign language, which is of course the most direct means of communication with anyone present. While this would be a worthy goal in general, existing alternatives provide a ready means of communicating both in person and remotely, using computers and phones.

In some cases, the alternatives include special hardware, and for others, readymade consumer devices are directly useful with relevant software.

Screen Reader and other Assistive Software Solutions

Screen readers are a category of software that interpret the content that appears visually on a display device, the screen of a computer or a phone, and reproduce it verbally. Typically, this will be in the same language, meaning, if the page is in English, the software reads it aloud in English. This is extremely useful for persons with little or no vision, and may also be found useful for such persons with limited hearing.

JAWS, an acronym for Job Access With Speech, was one of the first such software programs. It is only available on computers that run the WINDOWS operating system. The output is possible in both verbal and Braille forms. The pricing of the software, however, limits its accessibility in many countries, and users often install the free trial version, using other software to get around the trial period limit. Doing this is not legal in India.

However, users of Windows computers, which are also the most popular in India, can use 'free software', software whose license for use is not charged. The most popular solution in India is NVDA, or Non Visual Desktop Access.

Other than computers that run on the Windows operating system, the next most popular desktop operating systems in India are GNU/Linux and Mac OS. GNU/Linux is also licensed to be used free of cost, and runs on the same kind of computers that also run Windows, that are made by many manufacturers.

Mac OS is only available on computers manufactured by Apple Computer. Similarities in the design of these operating systems means that Free Software solutions designed to run on GNU/Linux will usually also work on Mac OS.

The most well known screen reader software for these operating systems is Orca, which is part of the 'Gnome Project'. It is distributed as an integral part of many desktop versions of the GNU/Linux operating system, and can also be used to actually carry out the installation of the operating system itself. The Vinux version of the operating system is specifically designed for persons with visual impairments.

For Apple computers, the operating system is also inbuilt with assistive solutions for persons with low vision. The most prominent is VoiceOver, which is primarily a screen reader. In addition, the display output can be converted to Braille using Braille Support, and this can be sent to several Braille devices at the same time, which is useful in a classroom situation, or for meetings.

Apart from these features, screen text may need to be magnified, or the display screen contrast modified for higher clarity, for persons with low vision. These are features also found in most GNU/Linux desktop installations. For Windows, similar assistive solutions can be downloaded and used, such as Magic, ZoomText and Windows magnifier, and for screen readers, Narrator, Supernova, System Access and Windows-Eyes are some of the alternate options.

Braille Devices for Computers and Mobile Phones

The Braille Display Device makes it possible for Deafblind people to communicate with people who can see. The communication works in both directions. The person who can see types a short text, the deafblind person reads the text in braille, and can answer via the braille keys. This answer will be shown on a LCD display. In this way, the deafblind person can communicate with strangers (for instance, in a shop) without any physical contact, or the need for the other person to understand Tactile Sign Language.



The PAC MATE BRAILLE DISPLAY from Freedom Scientific, synchronises with JAWS as an interface on a computer. The text typed on the PC is converted into Braille dots on the PAC Mate peripheral. A Deafblind person reads the content through Pacmate and responds through PC/ Laptop keyboard. Braille display settings are quickly accessed with hot keys, and navigation is provided. The present version of this portable keyboard and computer is the Pac Mate Omni. Aside from communication, the device is directly useful for reading books etc

Standard Accessibility Software (Paid) for Mobile Phones

Talks, and Mobile Accessibility, are software for the Android Mobile Phone, to help a Deafblind person to use the phone independently. Talks is, in addition, useful for Whatsapp and Facebook also. However, it is not straightforward for a blind or deafblind person to actually install the software and configure it independently, and this is an issue that needs serious attention, all across India, in terms of creating centers for assistance with technology where people in need can have their phones customized for use with low and absent vision.

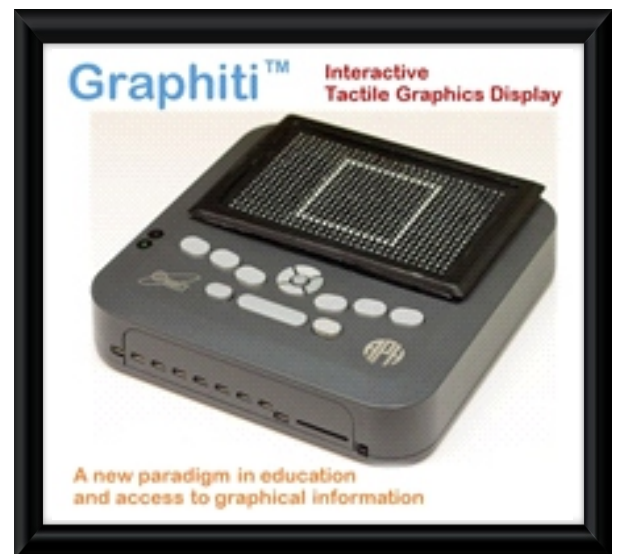
The Braille Edge 40 is a refreshable Braille display device, with additional features that include note-taking and automated reading from the notepad function.

The Bluetooth Braille Display Device and similar devices, are hardware peripherals helpful for a smartphone, which is far more portable than a computer. Functions such as note-taking and reading/playback are possible directly on the phone.



If the smartphone also has the Talkback function installed, the device can access the phone without Talks or Speak Mobile software. Google BrailleBack is an application that helps a deafblind person use the inbuilt Talkback facility, but rather than announcing it verbally, the information is sent to the Braille display.

The latest generation of these devices is the low-cost Graphiti, a research-funded development of a 3-D interface for touch, introduced by Orbit in 2016, following the Reader 2.0, which is expected to become available as a low-cost refreshable Braille display, both of which are enabled with an API to connect any device. The devices are expected to be in the market soon, when the present prototype testing program is completed.



Affordable Smartphone Options for the Deafblind

For the deafblind, it is not always necessary to depend on additional (and expensive) peripherals in order to use a smartphone. Various applications have been created to use the vibration feature of regular mobile phones, costing as little as Rs 1,500 in the Indian marketplace, for communication, suitable for persons with little or no vision, hearing and/ or speech. Many devices are also built with small qwerty keyboards, which makes input possible by touch alone, apart from the use of small handy Bluetooth-connected keyboards for any smartphone. The smartphone is capable of supporting multiple methods of communication, and these apps help to use them. Many are supported by public funding, and are free to use. Others may have features of special interest, and it depends on the needs and ability of the user to make use of them, to justify the expense.

Vibrations software

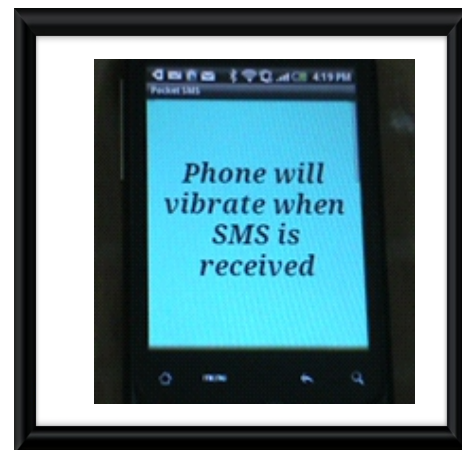
The Bapsi Series of applications cover a range of communication and gaming applications. Many are directly available from the Google Play Store for Android based phones.

Akhtar is a sophisticated text editor for qwerty-ready smartphones, suitable for use by persons with exceedingly low vision, hearing and speech. It was developed with the assistance of Akhtar Dhale, to meet the particular needs of a deafblind person with the ability to use a keyboard. It assists the user to write complex sentences and paragraphs. It enhances the basic features originally developed for dbtype, which is described in detail below. The development of this solution demonstrates the value of a collaborative approach to meeting the needs of an inclusive society.



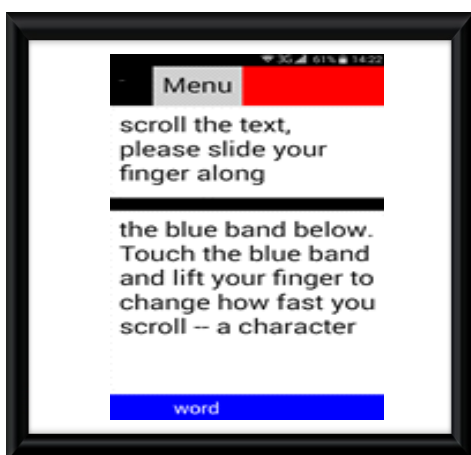
TellMyPhone is a straightforward communication interface for quick communication between strangers, one of whom is exceedingly low-sighted, with poor hearing and speech. It offers close to hands-free operation for the user, while the other person has access to all the traditional interface features of the smartphone.

PocketSMS should be directly downloaded from the Bapsi website. The APK file is installed in one step - select the v1.1 file preferably. A pdf file explaining how to use the application is also linked.



dbbug V2: a game for the deaf-blindis available from the Play Store. It is a fun game that uses the tilt sensing function in a phone or tablet to control the actor, who has to go catch a bug.

Narangi2 : A Slate for Deaf-Blind Children is available from the Play Store. It is the digital screen equivalent of a magic slate, allowing the player to draw and sense the drawing using the finger touching the screen.



Universalcom is a simple and easy to use communication interface for persons with low vision, hearing and speech.

SMS for Low Vision App notifies the user of an incoming sms, converts it into very large text with high contrast on the screen, and easily switches to reply mode to allow input via keyboard or Braille device.



dbtype is an effective text editor, a reader and input interface, for persons with very low vision hearing and speech. It is very easy for persons with no training to use it to create text made as easy as possible for low-sighted persons to read. Replying can be via keyboard or Braille device, and the device will display or speak it aloud for the other person



Showitem: Picture Based Communication for the Non-Verbal is a navigator for a customisable gallery, that enables the user to rapidly find suitable pictures to use for quick and basic communication (PECS), when verbalisation is not an option.

Getting there

Presently, there are limited facilities for deafblind children (and almost nothing specifically for older people) to learn to communicate independently, in India. There is a need to create awareness about the options, other than special schools, available online to learn both Braille and Morse, in order to make such tools available to anyone who has a need to use touch to work or communicate.

Braille and Tactile Sign Language

Training in the use of Braille and Tactile Sign Language is part of the basic curriculum in training facilities intended for deafblind instruction. TSL helps take care of interacting with other people for basic needs, and Braille makes reading specially created paper books, and communicating with the use of a computer, possible.

Morse Code

There is a common tactile language available and in common use, whose application in the use of smartphones (and some tablets) has a lot of potential. This is Morse Code, which can be modulated directly through the fingertips, or through the inbuilt vibration function on phones. It is recognised and commonly taught, for students of radio communications. However, there is no mainstream training in India for the deafblind to communicate in real time, using a smartphone. The standard curriculum presently supports computers, and to some extent phones, using Braille display peripherals. Learning and using Morse in addition will help many more deafblind people use less expensive phones directly, without additional hardware, as well as provide a readymade and versatile tactile sign language for immediate use with persons present.

Being Deafblind: The Indian Experience

Zamir Dhale

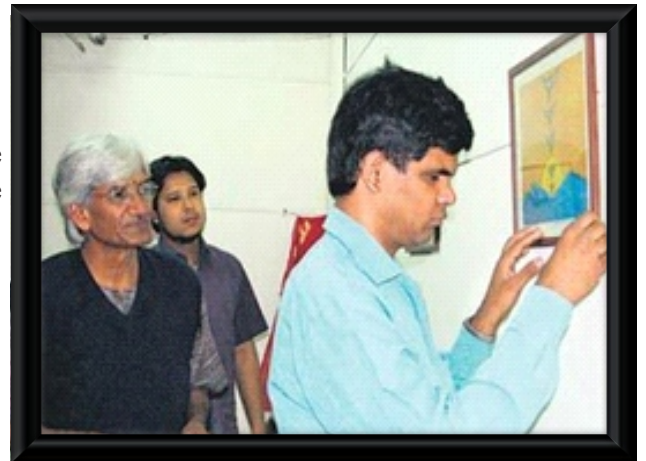


In 1999, I was studying at the Helen Keller Institute For Deaf and Deafblind, India. This school, the first in India, was established in 1977 especially for deafblind children. I went to Ahmedabad for a month, to visit an organisation working with blind people. During that time, I also attended a workshop for disabled students. This was when I discovered that blind people can operate computers, taking the help of a headphone, and felt that I should also learn, and find out how to use computers myself.

On my return, I urged the founder, Ms. Beroz Vachha, to start a computer training programme. She agreed, and due to her hard work and dedication, it was started the very next year, 2000.

Now, I also teach deafblind children and adults computer skills. I am active in creating a movement to ensure that all deafblind children in the country should get their own Braille display device.

Familiarity with the use of computers and mobile phone provides a real chance for deafblind persons to be independent, to be able to communicate with anyone, without being dependent upon an Interpreter.



Today, I feel proud for having 3 such wonderful students as Pradip, Abbas and Akhtar, because they have been very interested in learning so many new things about computer and mobile phones, to find out more about living an independent life, despite the challenges they have to face in life. Just like me, they are stepping out to show it is possible to overcome problems and difficulties in life.

Thanks be to god for all his blessings and to send me to start this organization, which we have called Society For Empowerment of The Deafblind.

Pradip Sinha:

I was a student at the Helen Keller Institute for Deaf and Deaf-Blind in Mumbai. I had completed the course of typing-writer for 3 months in Kolkata, and was also practicing this at HKIDB.

After that I wanted to learn how to operate a computer without using the refreshable braille display, but it was a little difficult to

My first volunteer helper was a young girl, Khusnaz, who was interested in interpreting for deafblind persons. She helped me for one year. She taught the basics of Microsoft Word and the use of the Duxbury Braille Translator (DBT)



We find we need a lot of time to read and practice, so that we can become as proficient as possible, and this may be more time than that needed by other people we meet, as we have to learn several things all at the same time.

My dream is that all deaf-blind people should get an opportunity to work in any company, with the assistance of tools such as the refreshable braille display. Being able to work with computers opens up all kinds of ways to work and earn. I feel the refreshable braille display is a blessing.

I also use a small braille display device (Focus 14 blue) for the smartphone. This is very useful while travelling.

I am on my way to greater expertise in using computers and other digital devices, and plan to start a training and service center for Braille-friendly technologies in India, where this has hardly been possible until now, outside Mumbai.

I am employed with Dell EMC, Bangalore, with the IT Asset Management team. I work alongside other employees, using computers, with the help of a Braille display.

Abbas Khairnaz:

I am employed in the office of the Helen Keller Institute for Deaf and Deafblind (HKIDB) in Mumbai, and also work as a proof-reader for Braille-friendly captions on medical packaging, for several Indian companies. Braille Medical labels on cartons represent different languages from India, and are an important feature to help the blind and deafblind buy and use any necessary medications independently.

I do hope deafblind people will be learning more technologies to develop themselves and open up different opportunities to work and accomplish something.

I joined HKIDB in 2002, where I met Pradip, who was teaching Deafblind children in the special computer training classroom. I was encouraged to learn Braille and tactile sign language, which has expanded my knowledge, and also the ability to use English. Pradip taught me how to work with a Braille-equipped computer, the DBT, and the operation of some print and paper friendly machines, such as the Braille Embosser and Braille writers. After getting exposure to this education and training, I have successfully completed my education and got my certificate of graduation.



These devices showed me how to work in an office with the help of such equipment. But to get around by myself, I use the Freedom Scientific Focus 14 Blue Refreshable Braille Display, which can be used with Android smartphones. After Symbian was discontinued, however, I used a (Microsoft) Windows smartphone. The need to be independent showed me that I next needed to learn how to use the Android phones also, and to work out how best to continue using the Focus Blue with it.

I use the inbuilt Talkback facility in Android, together with Google BrailleBack, from the Play Store, and can now use my Focus 14 with Bluetooth to connect with my Android phone. Combining the inbuilt Talkback with BrailleBack allows me to use the device and change its settings myself, to suit my needs. These are beginning to work really well for me. I enjoy the Braille Display Device with smartphone. I am thankful to God for being able to have and use this equipment, for the self-confidence and independence it gives me

Akhtar Dhale :



I have worked at the Helen Keller Institute as a teaching assistant, helping Deafblind children learn and acquire skills in both communication and mobility. I also worked with the multinational company Morgan Stanley, as a Clerk, taking care of office supplies in the storage room of the company offices at Goregaon in Mumbai. I currently live in Pune, and am in the search for suitable work closer to home.

When I was younger, and until 2015, my vision was sufficient to allow me some ability to read a printed page, but it has now gotten worse. I need a cane to assist walking, and bright sunshine or lights makes it difficult to focus.

As a result, my ability to use the smartphone has also reduced. I need very large text and contrast, but the standard settings of the phone do not enable useful information to be displayed this way. At this time, the only option for me is to use the Braille refreshable display, without which I am no longer able to live and work as independently as before.

We Can Help You Get Involved

You can help by donating money, or time and effort, to SEDB, or by directly assisting deafblind persons to acquire the necessary hardware and training, through SEDB-provided support, to use assistive devices wherever possible, in order to actively participate in daily activities alongside other persons, communicating and working at everyday tasks.

Specifically:

1. You can make a one-off donation, through cheque or RTGS (electronic transfer of money). If you would like to send a cheque, our physical address is easily referenced on our website, <http://www.sedbindia.org>, and on the letterhead above. Please do confirm separately by email, info@sedbindia.org.
2. Become a regular donor by contributing a small amount, either monthly or quarterly, to help us meet our regular expenses.
3. Provide material assistance to run our office smoothly. This could be computers, or laptops, printers, scanners, Braille display devices, networking hardware for internal connectivity, and so on.
4. Become a volunteer : spread awareness about SEDB and our activities on social media platforms. You can help us wherever you are, by writing project proposals, or by helping to get them to people who want to fund our projects.

Bank Details

Bank Name:	State Bank of India
Bank Address:	Old Agra Road, Nashik
Account No:	35733949762
Name of the Account Holder:	Society For Empowerment of the DeafBlind
IFSC Code:	SBIN0001469



**Bashir, Sr No. 809, H.No. 2954/Q/01, Near IDBI
Bank, Wadala Naka, Nashik - 422306.
Email: info@sedbindia.org.
Website : www.sedbindia.org**