DEAF-BLIND TECH GADGETS IN EDUCATIONAL SETTINGS

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Educators often wonder about the availability of various adaptive technology gadgets for deaf-blind students in different types of education settings at elementary, middle, and high schools, as well as at post-secondary institutions. In fact, a wide variety of equipment is available. Technology is always advancing, manufacturers are continuously updating their products, and new products are frequently introduced. Therefore, naming a long list of gadgets is difficult. This article focuses on specific communication tools, most unknown to many educators whose students could benefit from them.

The equipment listed is categorized by one of two primary uses, telecommunications access and face-to-face communication. However, many devices can be used in a multitude of ways. Users of adaptive technology are always devising creative ways to use their gadgets.

TELECOMMUNICATION ACCESS

TTY or TDD or TT

Individuals who are unable to discriminate speech over a telephone, can use a TTY (derived from ~~-t~~eletype") to communicate via telephone. These devices are also known by the terms TDD (telecommunication device for the deaf) and TT (text telephone). Because the units are not limited to use by deaf persons only—for example, many individuals with speech disabilities also use them—TTY is preferred. During a TTY conversation, both communicators must have a TTY and they alternate typing messages back and forth.

Relay Service

TTY users who wish to communicate with non-TTY users can use the relay service system, which came into existence in the late 1980s. A communication assistant (operator) verbally relays what the TTY user types to the person without a TTY and types what the non-TTY user speaks to the TTY user. Relay services are available throughout the United States and all of the telephone access equipment cited in this article can be used with relay services.

Internet Protocol (IP) Phone Access

Deaf-blind people can use computers and Braille notetakers to communicate via the Internet. There are four options: 1) text messaging via AOL instant messaging (AIM), 2) relay services via AIM, 3) NexTalk Text Service (NTS), and 4) web-based TTY interfaces.

Text Messaging via AIM. Cell phones can be used to communicate with deaf-blind people via text messaging. A deaf-blind person needs to add the cell phone number of whoever he or she wishes to text to his or her AIM buddy list. The format in adding a cell phone number to the Buddy List is +12122002000. Just click on a desired number and you can start text messaging. It is just like instant messaging.

Relay Services via AIM. Currently, five relay service providers offer a text-based AIM relay service to place relay calls to any standard phone in the United States. For each provider, you add a screen name to your AIM buddy list. Once you click on it, a help screen will appear giving you instructions on how to perform a relay call. The AIM screen names for each service are as follows: My IPRelay for MCI, ThatsHamilton for Hamilton Relay Service, SprintIP for Sprint Relay Service, SIPRelay for Sorenson Relay Service, and HawkRelay for Hawk Relay Service. Unlike traditional phone communications, AIM does not have the capability to make direct calls to other parties with TTY devices or to manipulate real-time conversations via relay calls.

NexTalk Text Service (NTS). NTS is a free program available from NexTalk (www.nextalk.net). It requires registration and downloading of a software program. Once the software is installed on your computer, a screen with four options—text call, relay call, video relay service (VRS) call, and ~~"s~~end an instant message"—will be displayed. The text call option allows you to make a direct TTY call to another person with a TTY device. Relay call allows you to connect to a relay service communication assistant and the system works the same way as it does using a regular TTY. VRS call allows you to communicate with a hearing party in sign language through an interpreter. Use ~~"se~~nd an instant message," to send a message to another NTS user who is either online or offline.

NTS also offers a feature that assigns a toll free number that a deaf-blind person can provide to anyone without the need to explain how a relay service works. Once a hearing person dials the number, the computer will determine the type of a call it is and automatically route it to a TTY, fax, or relay operator. For TTY and relay calls, messages will be left and then automatically forwarded to one or more e-mail addresses assigned by the deaf-blind user. Faxes will also be forwarded to e-mail addresses for viewing and printing. This method is not recommended in most cases because—depending on font type and quality—most faxes come in formats not viewable in text via Braille. An optical character recognition (OCR) device may be needed to open and view the fax files. The program cannot guarantee it can read any type of incoming fax. The same is true of Adobe Reader, which can read some PDF files and display them in text with the support of a screen reader.

Web-Based TTY Interface. Although not very accessible, you can make TTY and relay calls via the NTS website (www.nextalk.net), as well as on all websites for the relay service providers mentioned above. For deaf-blind people who use Braille displays, this method is not recommended because these websites use Flash and Java web-based technologies to enable real-time conversations.

Generally speaking, with the technology and programs discussed above, deaf-blind people can establish group chats, eliminating barriers among everyone. Anyone can join a chat room and type messages that are simultaneously viewed by all those who are logged on to that same chat room. This means that deaf-blind people need to be skilled in Braille reading in order to be able to follow online conversations. AOL, MSN, and Yahoo messengers all have a conference chat feature that deaf-blind people can use for establishing chat rooms and inviting others to join. This feature has become a great option that gives deaf-blind persons the same immediate access to information that hearing-sighted, deaf, and blind consumers cherish. There are also programs (e.g., ICQ) available that can be used to establish a live conversation with another person exactly like on a TTY.

FACE-TO-FACE COMMUNICATION

Deaf-Blind Communicator (DBC)

The Deaf-Blind Communicator (HumanWare), released in the fall of 2008 is a breakthrough multipurpose tool for deaf-blind people. It consists of two separate components that deaf-blind users can easily carry wherever they go. The main unit is the Braille Note mPower with a Perkins or QWERTY keyboard. The main difference from a regular Braille Note mPower notetaker is that a specially designed program called DBC has been installed. The second component is a personal digital assistant (PDA) known as a companion unit which is a cell phone with a visual display and a QWERTY keyboard that also has a part of the DBC software installed. These two components communicate wirelessly with each other using Bluetooth up to 30 feet apart.

In order to establish face-to-face communication, a deaf-blind person hands the cell phone to a sighted person. The cell phone has a retractable security tether that remains attached to the deaf-blind user. Whatever the sighted person types on the cell phone in text is sent to the Braille Note mPower and displayed in Braille. The deaf-blind user can then type a response on the Braille Note mPower and send it to the cell phone.

Not only can the DBC work in face-to-face situations with sighted people using the cell phone, but a deaf-blind person can use it to communicate with another deaf-blind person using a Braille Note mPower with DBC or for deaf-blind people to chat with other deaf-blind or sighted users in a group setting.

The other two features the DBC offers are TTY and short messaging service (SMS) texting. For TTY use, the Braille Note mPower has a land-line connector and special TTY software built right into it making a separate TTY unnecessary. A deaf-blind person can enter the telephone number of a TTY or relay service and either store that number in an address book for future use or make a call and proceed with a TTY conversation. The DBC also has an answering machine built into it.

For short message service (SMS) texting to other cell phone users, text messaging is fast becoming one of the most frequent forms of communication between cell phone users. A SIM card can be purchased from a wireless provider and installed in the cell phone. Following the same basic steps used when activating a TTY call, deaf-blind users can choose to activate the phone to send text messages. Because of the wireless Bluetooth connection, deaf-blind users never need to access the phone directly as everything is controlled right from the Braille Note mPower.

Braille Sense Plus

The latest model of the Braille Sense notetaker family, Braille Sense Plus from GW Micro, is another excellent face-to-face communication tool. It has a built-in LCD display that can be used for face-to-face communication. The only additional item required in order for this feature to function is a USB QWERTY keyboard that is plugged into the notetaker. The printout on the LCD display can be rotated so that a deaf-blind person and a sighted person can communicate face-to-face rather than side-by-side.

Braille Sense Plus has a VGA port to connect to a regular computer monitor. Both the built-in LCD display and the option to connect to a monitor make it possible for teachers to work more effectively with deaf-blind students. In addition, Braille Sense Plus has MSN Messenger making it possible for a deaf-blind person to send instant messages.

Pac Mate

Unlike other Braille notetakers mentioned above, Pac Mates use a Windows operating system called Windows Mobile, which makes it possible to install off-the-shelf program applications. Pac Mates use a mini version of the JAWS screen reader, making the transition from a computer with JAWS a breeze.

One Pac Mate feature that is beneficial to deaf-blind people is the ability to use AIM to place relay calls to any standard phone in the United States and also to text message other cell phone users as mentioned earlier in this article. With its Freedom Scientific TTY (known as FSTTY) application, Pac Mate also offers a platform similar to the Braille Note mPower with DBC for TTY. However, unlike Braille Note mPower's built-in modem, Pac Mate requires one to connect a compact flash-to-serial adapter to Ultratec's Intele TTY modem which can be complex and bulky.

Like the Braille Note mPower with cell phone for face-to-face communication, Pac Mate uses its Face-to-Face application that works with HP's IPAQ. They communicate wirelessly via Bluetooth and can be up to 30 feet apart, virtually anywhere in the same room. The deaf-blind person can also converse with another Pac Mate user or in a group setting.

SUMMARY

This article provided a brief overview of adapted communication platforms for deaf-blind people. People who are deaf-blind have a wide range of vision and hearing losses. Each also possesses a broad range of skills, abilities, and preferences. This fact should be kept in mind when trying to locate the right gadget. What is best for one person may not necessarily be best for another. When trying to determine the most appropriate equipment for a person, the person's uniqueness should be taken into consideration and addressed. Also, because new gadgets are being developed on an ongoing basis, staying abreast of progress in technology is vital.

Adaptive technology can make a substantial impact on a deaf-blind person. It can open doors and allow people to overcome obstacles that once seemed overwhelming. Using technology to close the digital divide will offer more options for education, training, and future employment for deaf-blind people. Most importantly, proper technology and training can help to decrease the feelings of isolation experienced by many deaf-blind people.

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RETURN TO TOC