

AT Guide to Communication

Choosing the Right Device

An accurate and detailed assessment is essential before any steps are taken to select an appropriate communication device. Identifying a device to match the user's needs will require careful consideration of such things as literacy skills, physical access abilities and portability.

Ideally, a speech and language therapist should undertake a detailed assessment with the individual user and his or her family or carers in order to optimise the match between the user and the device.

Training and technical support are also an essential consideration so that:

- family/carers are confident and willing to support the user regular daily updating of the device (where necessary)
- sufficient funding is secured to ensure the user receives training in the use of the device
- adequate repair/technical support is put in place right from the start to avoid frustration and disappointment

Portable or Mounted?

Communication devices, just like computers, vary considerably in size and weight. Devices currently available range from desktop-style communication aids designed for mounting onto wheelchairs or other mobility devices, to hand held devices such as palmtops which are highly portable and lightweight. In between these two extremes, there are a range of other options which can be carried using shoulder straps, wrist bands and waist straps.

A key consideration therefore is to define what degree of portability, if any, is required by the user. Furthermore, some devices are promoted for their portability, but in practice, can prove to be too heavy to be carried around throughout the length of the day. Many portable devices can be mounted if necessary.

The following is an example of a communication device which can be portable or mounted:



Lightwriter, a communication aid which uses synthetic speech

Symbols or Text?

For people with limited literacy skills, the use of symbols can help them choose messages, or select words to create sentences. There are many different types of representations, from photographs, to picture symbols to line drawings. Consistency of the picture symbols is key, so that the user can easily recognize the word or phrase. For individuals with visual impairments, objects of reference can be used to represent words and concepts.

For people who have acquired literacy, text based systems, incorporating a physical or on-screen keyboard, allows the user to create unique utterances by spelling words. This can be assisted by using word prediction and saving commonly used phrases for easy access.

Symbol and text based systems are not mutually exclusive, and many systems allow access to both forms of representation.

Voice Output Options

Communication devices are designed to operate using either:

- synthetic speech (using a speech synthesiser)
- digitised or recorded speech

Synthetic Speech

There are a number of synthetic speech engines commercially available including Loquendo, Acapella, RealSpeak, Dectalk© and Microsoft's SAPI speech engine. Quality is often related to price.

These speech engines convert text into speech, and recent years have seen considerable advances in the quality of the speech produced by them. Some

include vocalizations other than speech sounds, such as throat clearing and coughing to make speech sound more natural.

To date, there are limited Irish-accented speech synthesisers available, but work is ongoing in the Centre for Language And Communication Studies in Trinity College to develop these. A test version of the Irish language synthesizer can be found at www.Abair.ie

Digitised or Recorded Speech

Recorded speech is usually used in devices with a limited number of messages available to the user. It is important when using recorded human speech to ensure that the same person's voice is always used, as our identity is closely allied with our voice, so consistency in recorded message is essential. In addition, it is important that the recorded voice matches the user in gender and approximate age.

Using different people's voices to record messages on the same communication aid will be distracting for both the speaker and the listener, and will undermine the user's attempts to identify with the recorded voice.

Dedicated or Computer Based?

The best way to answer this question is to understand firstly what the user wants to be able to do with the device, and then to explore what hardware and software options are available which will meet the user's needs.

Dedicated Communication Devices

Dedicated communication devices are designed specifically with communication as their primary goal, although recent advances in infra-red and bluetooth technologies have led to the incorporation of environmental control options being added in an increasing number of cases.

Dedicated devices tend to be more stable than PC-based software programmes, but are also more expensive. They are available with both text-based and picture-based programmes, and many are wheelchair mountable.

Below is one example of a dedicated communication device:



ECO2 with an infra red headpointer

Computer Based

In recent years, a wide number of manufacturers have developed software programmes which can be installed on to a standard Windows computer.

These programmes have the advantage of being more affordable than dedicated devices, but they can sometimes be unstable, and this is a significant drawback since access to communication should be available to the user at all times. Nonetheless they offer a more affordable choice to the user, and consequently, more flexibility to change or adapt the system as the user's needs change over time.

Communication software programmes come in a range of styles, and vary in complexity. Some are largely 'content-free', and allow the user and his or her family/carers to programme words and messages to suit the user's specific requirements. Others come with templates consisting of vocabulary sets which enable the user to communicate straight away, without the need for immediate programming. However, all software should be customised to meet the user's needs, and should be updated on a regular basis as the user's needs change and expand.

As with dedicated devices, communication software programmes can be text-based or picture-based.

Contact Details

National Assistive Technology Training Centre, Enable Ireland, Sandymount Avenue, Sandymount, Dublin 4.

Tel: 01 2184100 E-mail: at@enableireland.ie

[Visit our e learning portal www.enableirelandat.com](http://www.enableirelandat.com)