

# Learning Principles

## Supporting learners who are blind or partially sighted



The needs of individual learners with sight loss who want to participate in learning and employment opportunities in Scotland vary significantly as can the way in which they are able to access the training and support they require.

This paper describes some of the issues and barriers to learning and suggests practical ways of providing support that will result in the wider participation of blind and partially sighted people in learning.

In brief, the terms 'blindness' and 'partial sight' cover a range of types and degrees of sight loss. A learner's functional vision, for the purposes of training, can range from no useful sight (only about 4% of the total number) to useful partial sight.

The learner will be able to describe the functional implications of their sight loss and their personal experience of it. This may vary from being able to access printed material but have difficulty travelling independently, to being a Braille user able to travel independently with support.

Sight loss is a relatively common cause of disability in the UK and is much more heavily represented in the 65 years plus age group. As there is a much lower incidence in people under 65, it is inevitable that, in some learning environments, staff may encounter blind and partially sighted people for the first time.

It is important to note the current employment situation for blind and partially sighted people in Scotland. The unemployment rate for people with sight loss in Scotland is between 75-80%, a figure that has remained virtually unchanged in 10 years. In addition, about 300 people a year in Scotland join the unemployment statistics when they leave work because sight loss occurs or deteriorates.

Encouraging and improving the opportunities for wider participation in learning is vital to make a significant change to the current situation.

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### Making learning accessible

#### Use of technology

A wide range of adaptations and equipment is available to help learners with a sight loss to take part in learning. The solutions can include PCs with speech or large print output, scanners to convert printed matter to Braille, speech or electronic text, tape recorders and Braille notetakers.

Some blind and partially sighted learners will be familiar with the type of technology support they will need to participate fully in a learning programme. Some people may not be aware of what is available or will have little or no experience using it.

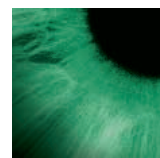
If the learning programme involves any technological interface, then specialist advice should be sourced.

The main aids and equipment that may be made available are:

#### Low vision aids (LVAs)

Low vision aids magnify/clarify and allow the most effective use of remaining eyesight. They range from hand-held magnifiers to closed circuit televisions (CCTV). They include distance magnifiers that are usually monocular telescopes, used to read board work, projections, charts, etc. Other types of magnifier include flat plates, which rest on text, and illuminated forms that may be hand-held or mounted on frames.

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Magnifiers of various types can be obtained on long-term loan from hospital low vision clinics and are on sale in commercial outlets.

All LVAs take time and patience to get used to. However skilled the user, reading with LVAs does inevitably take longer than reading with full sight.

## Closed circuit television (CCTV)

Most CCTVs look like a domestic TV set on top of a moveable platform. An object is placed on the platform and a camera is housed above the platform to show an enhanced image on the screen. A variety of controls is mounted on the CCTV.

Smaller units are available, with a hand-held camera that can be plugged into the video socket of a TV. Other types of CCTV are portable as they include a small screen built in to the unit. Some are designed to share a computer screen and have foot pedals to move the CCTV platform and switch the screen from CCTV to computer.

Magnification, contrast and other factors can be varied, and most models allow the polarity of the image to be reversed, giving either black on white or white on black.

Colour CCTVs are available, but monochrome may be more appropriate if 'text only' is to be read.

Many CCTVs allow the camera to be moved up and down, so it is possible to use them for writing or other practical tasks, such as scientific experiments.

Some systems can now be linked directly to a portable or desktop PC and can use 'screen capture' software to save images.

Conventional optical magnifiers have the advantages of being relatively cheap, highly portable and easy to use, but - as with all aids - they do not suit everyone. CCTVs are bulky and expensive, but they are versatile and can offer access to print to a wider range of people.

## Electronic reading aids

Scanning systems are now more widely used by partially sighted people who do not find a CCTV helpful.

There are two main types of scanning systems:

### Stand alone systems

The computer may also allow information to be stored so that it can be retrieved at a later date. Some are operated with a simplified keyboard, so that the user may not even be aware that they are operating a computer. These systems are designed for partially sighted people who want a reading capability only.

### Computer based systems

These consist of software with or without a scanner. The software may be designed specifically for use by a blind or partially sighted person, or it may be a mainstream product. Such systems are intended to be added to a computer with speech output or magnification already fitted, and are for people who require a reading facility in addition to other computer functions.

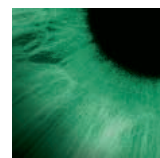
## Non-specialist adaptations

For some people with a sight loss, simply providing a larger monitor will help. The difference between an image displayed on a 20" monitor compared to a 14" or 15" monitor can be significant for some people.

Some operating systems have built-in facilities to improve access for users.

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A magnification system can be useful for some partially sighted computer users

## Magnification

A magnification system can be useful for some partially sighted computer users. These allow the user to display the screen image in a magnified form. Levels of magnification generally vary from x2 (image twice as large as the original) to x6. The higher the level of magnification, the lower the amount of data that can be displayed on screen at any given time. Towards the higher end of the magnification range, it is likely that a user would need an additional or alternative method to access the computer screen.

## Speech

Speech output can be very useful for computer users who can see too little for magnification to be useful. Speech output systems present data from the computer screen to the user via a screen reading program that outputs to a speech synthesiser or a standard PC soundcard. Some people prefer to use such systems with magnification or with Braille (see below).

## Braille

Braille output systems work in a similar way to speech output systems, whereby they use screen-reading programs but the output is directed to a refreshable Braille display. These devices have a set of cells made up of pins in a grid pattern. These pins are raised to form Braille characters. This technology is significantly more expensive than speech output, but is highly appropriate to the needs of some individuals.

## Electronic 'paperless' Braille devices, note-takers and text handlers

These machines are essentially portable computers with a QWERTY or Braille keyboard. Output can be on CD or disk or as Braille or standard print copy if suitable printers are available. Most also have a synthetic voice output and some have a 'refreshable' Braille display. This form of output is also known as soft Braille and uses Braille cells within which the dots can be raised, giving an effective computer display in Braille. They allow effective note-taking, writing and editing, and some carry almost all of the features of a personal organiser or portable PC, allowing word processing, database and other forms of work production.

## Tape recorders

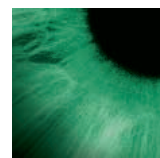
Many blind and partially sighted people use tape recorders to supplement both print and Braille reading and they are also useful for recording information and making personal notes.

## Daisy

Daisy is an acronym for Digital Accessible Information System. This is a new digital format, which facilitates the inclusion of audio, text and graphical/video information in one production. When viewed on a computer, the user can listen to the recording, view the text on screen and see pictures, all at the same time. The audio and text information is synchronised to scroll together. Screen colours, fonts and font sizes can also be adjusted to suit the reader's preferences.

From the user's perspective, there are two main benefits. The ability to compress large quantities of information onto a single CD means a considerable reduction in the need to store and label large numbers of cassettes. In certain circumstances, it is possible to record up to 90 hours of audio information on a single CD. This level of compression does, however, mean a reduction in the quality of the recording. Secondly, the Daisy system gives the user the ability to navigate the Daisy title very efficiently. The format enables a text to be recorded on up to six levels of navigation, making it possible for a user to find a chapter, section or sub-section very quickly. It is also possible to navigate a title by pages, groups and phrases. Compare this to trying to find a specific item of information from a pile of cassettes!

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The processes required to record a Daisy title are more flexible than for an analogue audio recording, and the final production can be copied or edited many times without any deterioration of the quality. This is certainly not the case for analogue cassettes.

## Publicity for learning opportunities

Flyers and advertisements in local or national newspapers are unlikely to reach fully the desired audience of blind and partially sighted learners. Local specialist organisations for people with sight loss, such as talking newspapers or local Societies for the Blind may send regular newsletters to their membership. Radio advertising may also be worth considering, especially through community networks. Scotland (albeit just in the West) also has the first radio station for blind and partially sighted people ([www.viponair.com](http://www.viponair.com))

## Accessible websites

Making a website fully accessible can increase its usability dramatically, not just for people with a sight loss. Sadly, a high percentage of websites are not accessible to blind and partially sighted people, even with the use of specialist technology.

Another consideration when providing information on a website is to ensure that an alternative to a pdf file is available. Generally, if a pdf file is offered as a way of accessing information, the same information can be made available as a simple Microsoft Word document. For less experienced PC users, pdf files can be more problematic to use with speech output programmes.

Websites can be made more accessible by offering a text version on the home page. This option, if positioned near the top of the page, can be a positive way to give people with sight loss, who are using adaptive technology, access to all the information in a relatively simple and cost effective way.

## Learning resources

If a learner asks for information in an alternative format, whether it's audio tape, Braille, an e-mail attachment or larger print, good practice dictates that it must be provided at the same time as the information circulated to other learners. The following can be used to give improved access to many people with sight loss:

- use 14 point print as a minimum general size for all printed matter
- avoid highly stylised typefaces and timesteps and omit italics, the use of unnecessary capitals and underlining
- avoid aligning the text to the right or centre. This leads to a variable space between words and can cause problems
- if the information is graphical, it may be more time consuming to make it accessible. Consideration should be given to providing either a text version of the graphic, a full description of the graphic, or an alternative way of presenting the information.

## Tutor support

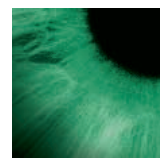
Any adaptations to the learning resources must be discussed with the learner in advance. A common omission when using a PowerPoint presentation, for example, is to anticipate that the audience will be able to read everything on the slides. In a presentation to an audience that includes a person with a sight loss, it would be beneficial to ensure all the information on the slides is described and to circulate an accessible version of the presentation.

Transcriptions or synopses of training videos or DVDs should also be provided.

When working in a small group with a blind or partially sighted person, it is good practice to ensure that people in the group introduce themselves, and that this is repeated before each individual contributes to the discussion.

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A blind or partially sighted learner should always be addressed by name as visual cues may not be recognised

Name plates or badges are not a substitute for verbal introductions if they cannot be easily read. A blind or partially sighted learner should always be addressed by name as visual cues may not be recognised.

Many non-verbal signals are used during training sessions, for example when tutors indicate approval or invite discussion or comment. These should be verbalised in order to ensure that individuals are not excluded.

It may be helpful to some blind or partially sighted people if the tutor describes briefly the layout of the training room and locations of doors, etc. Blind and partially sighted learners should be informed of any changes to the room layout, for instance during syndicate exercises.

Lighting in the room should also be considered. For some people with sight loss, good natural light is helpful, while others prefer natural light to be excluded as much as possible. It might also benefit a learner to sit with their back to a light source, rather than directly in front of it. This can depend on an individual's experience, but should be discussed with the learner where possible.

If a formal assessment or examination is an integral part of the learning experience, consideration must be given to informing the examinations board or assessment authority for an accessible version in the required format.

There may also be a need to agree additional time for the assessment and to have a contingency plan in case of equipment failure. Experience shows that this is sometimes a time-consuming process, so it is suggested that these issues are addressed as early in the programme as possible. This will also give the learner an opportunity to try out the procedure before sitting the exam or assessment. This is particularly valuable for people who are returning to learning and who may have not undertaken exams or assessments for a long time.

As is the case with a number of disabilities and other barriers to learning, individual needs do vary significantly. It is therefore important that professional advice and guidance is sought and that steps are taken to ensure the participation of the person with sight loss in any discussion or debate.

## Useful websites

[www.mib.org.uk](http://www.mib.org.uk)

[www.abilitynet.org.uk](http://www.abilitynet.org.uk)

[www.skill.co.uk](http://www.skill.co.uk)

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This paper is part of the Learning Principles series, which aims to provide accessible and practical information for staff in learndirect scotland branded learning centres.

Each document highlights best practice to help people to learn and stay learning.

The series covers a range of themes including sensory impairment, learning difficulties, brain sciences and working with deaf learners.

Learning Principles papers are available in pdf and plain text formats at:

[www.lds4partners.com](http://www.lds4partners.com)

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