University of St Andrews
Student Support Services

VISUAL IMPAIRMENT

Working with Students who are Blind or Partially Sighted

Guidelines for Members of Staff

Background Information

People may be born with a visual impairment or acquire one in later life. Some people are only slightly affected and many people have clear sight with the help of glasses, contact lenses or, occasionally, surgery.

A relatively small proportion of people with visual impairments cannot see clearly even with spectacles and may call themselves 'blind' or 'partially sighted' depending on the degree of disability. Some people have blurred vision, or cannot judge distances and speed, or are unable to distinguish between objects that have similar colour or shape. Others may see things that are very close, but little that is in the middle or far distance, or may have a restricted range of vision (called tunnel vision).

The majority of people with visual impairments will have some useful sight. Only a small proportion (about 4%) are totally blind and a few cannot distinguish light from dark.

A small number of people with visual impairments will also have other disabilities, and in particular may be deaf or hard of hearing. This may mean someone has no useful sight or hearing, but is more likely to mean he or she has some degree of deafness and visual impairment.

Implications for Studying

As sight is a prime way of gathering information and learning, not only for reading and writing but also for social interaction and practical activities, a visual impairment can have significant implications in an educational environment.

Accessing Visual Information

Most students will already have a preferred system of accessing information. The most common are large print, audio tape, disk, Braille, Moon or a combination of these.

Large print is printed material using large letters. A minimum of 14 point and preferably 16-18 point is recommended. It can be produced by photo-enlarging ordinary print, but the quality of the print is improved if work is produced in large print at the outset, particularly if bold print is used. It is generally more difficult to scan large print, and many people using residual vision find it tiring to concentrate on any print for long periods.

Students who prefer large print may, depending on their eye condition, use a CCTV (closed circuit television) which throws an enlarged version of a page on to a screen. Computer software can also be obtained to enlarge print on the screen, thus providing independent access to those students who prefer

to deal with material on disk. Others may use a hand held or desktop magnifier.

Many students will use cassette tapes for some or much of their studying. Because this system relies entirely on auditory input, it requires both practice and high levels of concentration and memory. It is more difficult to skim through audio material, although equipment is available which plays material at a faster speed than normal. Some people will use four-track, rather than the usual two-track tapes, allowing twice as much material to be stored.

Braille is a system based on patterns of raised dots to represent letters. Moon is a simpler though less common system. Not al blind people can use either, and Braille in particular takes some time to learn and requires a certain level of sensitivity in the fingertips. For those who are fluent, Braille offers a system exactly parallel to printed text. Braille can be created by a Braille embosser from a normal computer, so that the student or lecturer can input material as they wish and receive hard copy in print or Braille as required. Because Braille materials are much bulkier than print they can pose difficulties in storage and carrying.

Diagrams, tables and other pictorial information are less easily produced in Braille. In some cases it may be appropriate for information of this sort to be relayed through an oral or written description. Diagrams can be adapted and turned into tactile diagrams by Loughborough University, which runs a tactile diagram service for students across the UK. A cheaper alternative for diagrams is the use of German duplication foil (which can then be labelled on a Brailler) or plastic/manilla sleeves. The best solution will depend largely on the complexity of the diagrams being used and the student's preferred method of accessing information.

Some students may prefer to use human support instead of, or alongside, technological aids. The most common rôles are readers, note-takers in lectures and amanuenses (scribes) usually used only in examinations.

Students who are blind and deaf may have sufficient hearing to use a hearing aid. If not, they may use a signing system based on finger spelling with words spelt out in the palm of the hand. They may use any of the systems above to access and produce written material.

Technology

As technology advances, the options for blind students are improving. Computers can be adapted to output information through a voice synthesiser, in print of any size, or in Braille. Some computers have a panel of raised dots, known as a self Braille line, that provides a Braille version of what is displayed on the screen. Keyboards can be adapted or given Braille keys.

Optical character recognition systems (OCRs), more commonly known as 'scanners', are rather like photocopiers on which you place printed materials; the material is read into the computer which, with the appropriate hardware

and software, outputs the material in the chosen format. A Kurzweil reading machine is a simpler non-computer version of this process. Word search and other facilities which help to get around or highlight text are also useful developments for those who cannot scan or speed read material.

Many students are now using voice recognition software, which allows them to dictate to the computer. Another common piece of technology employed by many Braille users is an electronic note-taking device, such as Braille'n'Speak. The Royal National Institute for the Blind (RNIB) provides factsheets on all types of access technology. The Higher Education ACCESS Centre for Tayside and North Fife, a specialist technology assessment and training centre for students with disabilities, which is funded by the Universities of St Andrews, Dundee and Abertay and Northern College of Education, can help with an assessment of equipment needs of visually impaired students.

Mobility

Most blind students will need some mobility training in order to familiarise themselves with the site. Many blind students are guide dog owners. Guide dogs accompany their owners wherever they go and need regular access to water and a grassy run set aside as a 'dog toilet'. The practical arrangements for this may be complex in a university environment where one student may visit several sites.

Other blind students will use a 'long cane', which, as the name implies, is a long stick used to check the environment ahead as the individual moves forward. A white cane indicates the user is blind. People who are deafblind use red and white canes. Mobility can prove an extra challenge to students who wish to study abroad or who are undertaking field-work.

Physical Access

People with visual impairments usually find their way by becoming familiar with an area. It is important, therefore, that common areas and corridors are kept free from stacked chairs, bins or other temporary obstacles which may lead to an accident. For those people with some residual vision, a number of other things can be helpful such as contrasting paint work around light fittings, on handrails, door handles and staircases, clear signage and good lighting.

Many students will also benefit from having extra shelving in residential accommodation for bulky Braille or tapes texts, and extra sockets for equipment. Students with guide dogs will need access to a designated area which can be used as a dog toilet.

Teaching Strategies

As for all disabled students, the positive attitudes and co-operation of institution and teaching staff are essential ingredients of a visually impaired

student's success. Even with this support, blind students will have to work much harder than non-disabled students in order to fulfil their potential.

The following suggestions offer some general guidelines for teaching staff:-

- When giving instruction or providing information in lectures, tutorials or discussions, you will need to make sure that demonstrations are clearly understood and, if possible, seen by all learners. Instructions need to be clear and precise. It is no good saying 'over there' to someone who cannot see where you are pointing. Once a student has been given information about the layout of the room, it is more helpful to say 'by the door' or 'at the back of the room' or to guide the person's hand if more appropriate.

- Lighting is very important to most people with visual impairments. Requirements will differ from person to person; glare can be as problematical as deep shadow. Small adjustments can make a huge difference and generally inexpensive: for example, changing a light bulb. If you are talking, you need to make sure you stand in a well-lit place, facing students, but not directly in front of a window as your face will then be in shadow. Discuss individual requirements with the student.

- Many visually impaired students will find it helpful to be closer to work being done, so make sure seating is arranged flexibly to allow for this.

- If students need to have materials put on tape or into Braille, they will value having booklists well in advance. It will also help if appropriate page numbers are given and if texts are listed in priority order.

- Printed diagrams and written materials are easier to decipher if they are clear and simple on non-glossy paper, with a strong contrast in colour and tone - preferably good black ink on white paper. An uncluttered layout without too much on one page is helpful.

- Some students will find it useful to record lectures. Do not be concerned if they ask to do this, as it may be the most efficient way for them to review material and ideas.

- Some students will use other senses to take in information, for example feeling the shape of equipment by putting their hands over the tutor's hands during a demonstration.

- Blind and visually impaired students are more dependent on their hearing for information gathering, so background noises should be eliminated as far as possible. It is important to speak clearly.

- Most students will find it helpful if speakers introduce themselves by name in seminars or other group discussions.

- Do not assume that videos, overheads and material on a board will be useless to blind or partially sighted people. Explanations about the visual materials are likely to be helpful and any text should be read aloud and new or unusual vocabulary spelt out.

- Allow regular stopping points to check that all students have understood and been able to take in material, particularly material presented visually, such as projector slides.

- Blind and visually impaired students may prefer examination papers in large print, on tape or in Braille. They may prefer to present their own scripts on a computer, via an amanuensis or on tape. They will almost certainly need a separate room and extra time if using any of these arrangements.

- Equipment for visually impaired students includes a Viglen PC with an enhanced monitor, a colour printer, a Hewlett Packard Scanjet scanner, a DecTalk external speaker, and a Braille printer. This equipment is housed in our ITS/Student Support Services computer room attached to the Main Library building and which has 24 hour access.

Source

SKILL: National Bureau for Students with Disabilities
336 Brixton Road
London SW9 7AA

For further information and details of support and equipment available contact:-

Disabilities Team
Student Support Services
2nd Floor, Union Building
9 St Mary's Place
St Andrews KY16 9UZ
Tel: (01334 46)2038
Email: disabil@st-and.ac.uk