Suggested Teaching Strategies: blind and visually impaired students

Of the number of students who disclose that have a visual impairment, those who have a total absence of vision are a minority; many more students have low vision or partial sight. Access requirements of people with visual impairments will therefore vary widely and is not always evident. The type of assistance required will vary according to the degree and nature of their impairment. Remember to discuss directly with the student his/her individual requirements in a discreet manner.

Some students have gradually lost vision over a number of years; others may have been blind since birth. Some may have no vision at all, but most people who advise that they are blind have some vision and may be light-sensitive, may experience blurred or distorted vision, others may have a restricted field of vision having less side vision, central vision or may see only half the field of view. With some visual impairment, sight fluctuates and students may have some days when vision or light tolerance is much better than others.

The best guide to the student's condition and how it affects them is the student him/herself. Some visually impaired students may not appear any different from other students; others may use a cane or a guide dog.

Although a student may have difficulty identifying detail or reading print this will not always affect their mobility around campus. However, when the peripheral vision is affected it can reduce the visual field making mobility difficult. Learning routes around campus, particularly at the start of the year, is a time-consuming task, which other students do not have.

Vision also may fluctuate or may be influenced by factors such as inappropriate lighting, light glare or fatigue

How might visual impairment affect the student's work?

All students have to manage their work load as effectively as they can, but for visually impaired students this can be much more time consuming and requires good organisational skills.

The learning processes of students with visual impairment may be affected in the following ways:

Reading

- Ability to read printed material or diagrams - students with visual impairment may access information in a variety of ways, for example Braille, audio, or enlarged print. Braille readers cannot skim read and may take up to three times as long as other students to read a text. Students with some vision may be large-print readers or may not be able to read at all without using special computer software or equipment. Many blind students prefer material in an electronic format and use a screen reader such as JAWS. Some students may want material reformatted into alternative formats . Extra time is needed for this, and the student must wait for the material to be produced for them. Skim reading may be very difficult or

impossible and reading may need to be carefully paced to avoid fatigue or eye strain. Headaches often result from eyestrain. This may reduce considerably the study time available to these students.

- Finding books in the library may be impossible without assistance.
- Many will be unable to read examination questions and handouts in standard print or read their own handwriting when answering examination questions. They may also be unable to take their own notes. Extra time is needed to carry out some tasks, such as locating words in a text when shifting from one reading medium to another.

Lectures

- It may take longer for students to write down lecture notes and they may be unable to see PowerPoint slides or board work.
- Diagrams and new vocabulary can be problematic unless an oral description or additional clarification is given.
- Documentation given out in the lecture may not be accessible to the student.
- TV and video/DVD are generally less problematic than might be expected, but students should be told when they are to be used. Some students who are sensitive to light or screen glare may struggle with TV & Video Conference.
- Some students may choose to have a note-taker and others will prefer to take their own notes on to a computer, or other equipment. Recording lectures can also be useful and staff should be prepared to accept such a request.

Written work

- There may be delays in starting writing because of the extra time needed for reading. It may take longer to proof-read written work and to put a bibliography together. Presentation requirements may not be met unless the student has support in doing this.

Access to teaching staff

- Students with a visual impairment will need to speak to staff about the management of their course, but difficulties may occur with the following:
  - finding rooms
  - finding people in a crowd
  - recognizing people
  - using pigeon holes
  - finding information on notice boards

Before the start of the term

- Provide reading lists or course outlines well in advance to allow time for arrangements for taping or Brailing of texts to be made. Ensure reading lists are up-to-date.
- Encourage the student to contact the Student Wellbeing Service assist in finding readers, notetakers or other assistance, as necessary.
- Be aware that guide dogs must not be refused entry to buildings and classrooms. If a guide dog is used, it will be highly disciplined and require little space.

- Ensure that students who are blind or partially sighted are notified of organisational changes in an appropriate way

Teaching Strategies

There are a number of strategies which can be used by teaching staff which will help enormously, and there is an important role for tutors in educating other student members of seminar groups, so that the simple tactics outlined below are used by everyone.

Reading

- It is important for core reading to be identified well before the start of a semester, so that arrangements can be made for students to access it. Students may have to obtain it from the RNIB library or have this accessibly formatted as a recording, Braille or large print.
- Indicate compulsory texts in your reading list; it is helpful if key chapters can be identified if the whole book is not needed. Where the reading list is lengthy, it helps if this can be prioritised. The Library Service may be able to obtain electronic versions of the text either as e-books or by liaising with the publisher.
- Preparation in Braille, large print or audiotape takes time, so planning well-ahead is essential if the student is to have texts available at the commencement of the semester. Specifying the order of reading within a text is helpful as it can take many weeks to have a book reproduced into audio or Braille.
- In addition, organising the appropriate equipment requires time.
- Aim to meet the student with low vision prior to the commencement of classes
- Make required book lists and course materials available early.

1. Personal Delivery

Speech:
- Face the class when speaking. Speak clearly in a normal voice, not loudly, slowly or with exaggeration. Keep your hands away from your mouth when speaking. If in doubt ask the student if the pace is right.
- Identify yourself by name in case the student does not recognise your voice.
- Indicate verbally when you are entering or leaving the person's presence.

Visibility:
- Stand where glare is minimised if the student is partially-sighted e.g. do not stand with your back to the window.
- Convey orally whatever you have written on the board or shown on overheads, particularly charts and diagrams.

Position:
- The visually impaired person should be seated to best advantage. She or he will know where best to sit. This will usually be a seat near the front, or slightly to one side of the projector or board display.
- Seemingly minor issues such as finding a place in a busy lecture theatre can be a source of great embarrassment. Other students do not always offer assistance, mainly through lack of confidence about how they should react. If the lecturer can deal with these situations confidently and sensitively, it is helpful for everyone.

Distractions:
- Eliminate background noises as much as possible and speak clearly.

Equipment:
- Using ReCap to record lectures and tutorials can be very helpful for those who need to re-listen to what has been said in order to make accurate notes and to discuss the content with others at a later date.

2. Presentation

- Express written information verbally e.g. when viewing overheads or writing on the board.

Structure:
- Try to follow a logical structure for your session as this makes notes and recordings easier to follow.

Pace:
- Allow extra time for the visually impaired student to read through slides, assimilate information and respond before going on to the next stage. Providing reading material and slides in advance helps to prevent exclusion and reduces delay.

Contributions:
- If you are speaking to a visually impaired person in a group try to ensure that only one person at a time speaks so that he/she can more easily follow the thread of the conversation.
- Questions and contributions from elsewhere in the room, should identify the speaker verbally as the visually impaired student may not recognise the voice.

3. Use of Visual Aids

Vital Information:
- Ensure that students receive important information or organisational changes such as assignment details and changes in class times - . It is difficult to find lecture rooms if changed at the last minute

- Remember that visually impaired students will not be aware of messages left on notice boards, written on whiteboards or changes in lecture venues pinned to lecture theatre doors. Ensure that there are also verbal announcements of notices.
- Ask the student if assistance is required - do not presume that help is needed or that it will be readily requested.

New Vocabulary:
- Think about how to communicate information to students who cannot see what you are doing - if during lectures new terms are written on the board, an oral explanation and spelling should be given.

Reading Time:
- Consideration of their position in relation to visual aids can be very important for a student with visual impairment, therefore have AV set up at the start of the session and allow students choice of where they sit.
- Allow time for people to absorb what's on the screen.

Boards and Flipcharts:

- Talk through any calculations as they are made or procedures as they are carried out.
- Always read out what is written when using a whiteboard. Read any printed information and describe any charts or graphs being used and explain fully any diagrams, illustrations, acronyms or videos you use.

Overhead Projectors:
Slides:
- Consider the format of slides; small fonts, fussy designs, and poor contrast between text and background in on-screen presentations can all make life difficult.
- Use at least 24 point text and keep designs simple. Black or dark blue on pale yellow is often best. Similar to colour-blind students, some visually-impaired students have specific requirements when it comes to visual aids. Communicating with the student beforehand as to his/her requirements is the most supportive viewpoint to take.

Videos and Tapes
- Inform the student in advance if you plan to use a film, videos, slides or overheads, and discuss alternative ways of presenting the necessary information. Notifying the student of your intention allows him/her the option to request to see it beforehand. This will enable him/her to sit very close to the screen or have someone explain the film or video. It would be helpful to 'pause' on important points when the student is viewing the resource in class with others.
- If videos are to be used on a regular basis, the student may need an assistant to view the video with them at an alternative time.

4. Lectures

Handouts:
- Provide lecture handouts and PowerPoint presentations in priority order and prepare as much information as possible in electronic format, via Blackboard or ReCap to make this easier to access using assistive software or to reformat or Braille.
- This allows users with disabilities to adapt the information to a format which is suitable for them.
- Written materials are easier to decipher if they are clear and simple, on non-glossy paper and with strong contrast in colour and tone. A sans serif font such as Arial at 14 point size is a good starting point for clarity. Black print on yellow or white paper is usually clear, although students may have individual preferences.
- Use colour and imagery to highlight key points or important details but be advised that this is not an advantage when brailling material.
- Diagrams can be converted to tactile images by a number of methods..

Position:
- Try to stay in the same place and not move around while you are talking.

Booklists:
- It is important for core reading to be identified well before the start of a semester, so that arrangements can be made for students to access it. Students may have to obtain it from the RNIB library or have this accessibly formatted as a recording, Braille or large print.
- Indicate compulsory texts in your reading list; it is helpful if key chapters can be identified if the whole book is not needed. Where the reading list is lengthy, it helps if this can be prioritised. The Library Service may be able to obtain electronic versions of the text either as e-books or by liaising with the publisher.
- Preparation in Braille, large print or audiotape takes time, so planning well-ahead is essential if the student is to have texts available at the commencement of the semester. Specifying the order of reading within a text is helpful as it can take many weeks to have a book reproduced into audio or Braille.
- Be aware that students will need assistance in using references and the library.
- Be flexible with assignment deadlines and allow extra reading time.

5. Seminars

Students who have visual difficulties that affect their ability to access text may be excluded when there is some reading to do in the tutorial. They may also experience difficulties with face to face communication if they are unable to read facial expressions or body language. It can take time for students to get used to the voices of other students in their seminar and it may be helpful for speakers to say their name prior to speaking. It is helpful to provide any textual material, in an accessible format, in advance of the tutorial, even if this is not the tutor's usual practice.
Concerns are sometimes expressed about how other students might react to visual impairment. Usually over time this is not a problem. If difficulties occur, it might be useful to discuss with the student how they would like situations to be handled.

Chairing:
- Allow the visually impaired student to take his or her share in chairing the discussion.
- When someone else is chairing make sure that this person controls the discussion,
- Ask speakers to introduce themselves by name in group discussions.
- Do not allow more than one person to speak at a time.
- Verbally express your feelings as the student may not be able to see your body language.
- Give directions in words not gestures.
- Use strategies to verbalise some of the visual cues by being more explicit in your choice of language. A simple example would be replacing comments like "over there" with "directly behind you", or ensuring that when referring to written material i.e. "we've got to make sure we follow the instructions in paragraph two" the instructions are also read aloud. This is especially relevant when the student is using Braille as when a document is converted to Braille, it can more than double in length thus making references to 'second paragraph on page two' useless.
- Do not single out students with a visual impairment or discuss their requirements in front of a group.

Reading:
- Prepare handouts in advance so that people who are blind or partially sighted have diagrams, etc. to hand and include this in guidance for student led presentations.

6. Practicals, Lab and Studio Work

A variety of different situations can arise in practical sessions.
- Provide an individual orientation to laboratory equipment or computers in order to minimise the anxiety likely in an unfamiliar environment.
- Consider health and safety issues such as clear walkways and mobility around the lab.
- Some equipment or activities may need to be adapted or modified to allow students with visual impairments to participate in practical classes. Examples include: auditory displays of visual information (such as talking thermometers), tactical displays of visual information (such as beakers with raised markings), clamps and other devices for holding items of equipment, and hand held, illuminated magnifiers. Microscopes can be an issue and electronic versions which can be linked to a computer screen are very helpful.
- Students with visual difficulties working in laboratories can also experience problems with textual materials as well as equipment. In these circumstances, alternative formats, verbalising text or interfacing lab equipment with computer with large print or speech output can all be useful adjustments.
- Consider supplementing laboratory practicals, experiments or field trips, for example, by audio taping commentaries.

7. Fieldwork and Placements

Additional provision may have to be made for students on field trips or on placements.

- Schools organising placements, field trips or study abroad for students with impairments will need to consider, ideally alongside the students themselves, the differences between the new context and environment and the more usual, and often more structured, context of study. Sometimes, the use of equipment, arrangements or personal assistance could, with a little planning, transfer to a different context.
- Be flexible and talk through the possible options and solutions with the student well in advance to avoid problems.
- Some equipment or educational support may not be easily transferable. Recording lectures may be acceptable in a way that taping interviews with clients in a setting requiring confidentiality may not be.
- Portability may also be a factor to be considered for field trips and study abroad. Some non-medical, personal help, such as communication support for lectures, could be regarded as obtrusive during one-to-one work involving clients.
- A laptop with speech synthesis linked to a data projector could allow a blind trainee tutor to do the functional equivalent of writing on a chalkboard. This latter arrangement could clearly have uses in other work contexts involving presentations.

9. Choice of Room

- Ensure students are aware of emergency and evacuation procedures for the buildings they are using
- Doors should be kept closed or open, not partly open.
- Wherever possible objects should not be moved from their usual place without letting the person know.
- Check walkways are not obstructed.

Lighting:
- Choose a room with good lighting where light will be concentrated on the speaker's face.
- Adjust lighting for individuals. Generally good lighting is helpful, but for some students too much light can be a hindrance, and glare from shiny surfaces can be very distracting. Many students who are partially sighted are photophobic - they cannot tolerate bright light.

Human Support:
A visually impaired student may use a note-taker, scribe or a computer to write in lectures, tutorials or social events.

Note-takers:
- Some students will have difficulty adjusting focus between the board or display and note pad or may have insufficient vision to write legibly. Using a note-taker may be the only way the student has of obtaining a permanent record of the lecture.
- Note-takers may sit next to their client in order that the notes can be referred to during the lecture. They may type directly onto a laptop to enable the student to access notes immediately.
- Professional note-takers will follow the instructions of the visually impaired student about what should be included or excluded.
- Note-takers in the University are employed by an external agency which works in close conjunction with the Student Wellbeing Service and the student.

10. Examinations & Assessment

Students who are blind or visually impaired usually require alternative examination arrangements. The usual assessment format may need to be modified to achieve the assessment objectives. Clarity about the latter will be very helpful in determining acceptable modifications, which will be different for different types of assessment, or for different parts of the assessment, e.g. a student may be considerably disadvantaged by part of an exam paper with a heavy concentration of text, such as multiple choice questions, but have no additional difficulty in reading and understanding brief essay titles.

Assessed Coursework
- All visual impairments increase the time and effort which students must expend in activities of daily living, as well as in activities related to their studies. Be aware of this if a student is making requests such as extra time for the completion of essays and worksheets
- Provide extensions to assignment deadlines if extensive reading has been set. Consider setting alternative assignments in which students have the opportunity to work intensively on a few selected texts rather than having to read widely.
- Where presentation requirements are part of the marking criteria, this should be made clear to the student. They may not be using the standard word processing equipment.
- A student may have difficulty finding his/her essay or assignment in a pigeon hole or amongst a pile of other students' work.
- Guidance on writing development is no different for a visually impaired student than for any other student. However, any formative comments made on written work need to be accessible to the student – emailing them to the student, for

example, rather than writing them by hand. It is helpful to negotiate appropriate feedback mechanisms with the student.

- Proof-reading is not easy for many visually impaired students. However, it is important for a student to know if the level of errors in their work is unacceptable and to be given help in finding ways of improving accuracy.

References

RNIB see:
http://www.rnib.org.uk/xpedio/groups/public/documents/code/InternetHome.hcsp

Waterfield, J. and West, B. (2008) **Meeting the specific requirements of Blind and Partially Sighted Students studying in Higher Education in the UK** University of Plymouth: Plymouth

Previous publications, particularly those produced by the University of Leicester, , Cambridge and the Open University are gratefully acknowledged.

Sources of further information

The Disability Support team
TechDis: A Joint Information Systems Committee (JISC) funded service which provides information, advice and resources for supporting disabled students in HE and FE.
Details available from : www.techdis.ac.uk

"Accessible Curricula: Good Practice for All"
A guide published jointly by UWIC (University if Wales Institute, Cardiff), The Learning and Teaching Support Network Generic Centre and TechDis. Available from:
http://www.jisctechdis.ac.uk/techdis/resources/detail/investinyou/Accessible_Curricula

A framework for assessing and addressing curriculum accessibility issues produced by a partnership of five West ofd Scotland HE institutions as part of a project funded by Scottish HEFC. http://www.teachability.strath.ac.uk/

SCIPS - web based resource that provides Strategies for Creating Inclusive Programmes of Study) SCIPS is a resource, primarily for teachers and trainers, developed by Dr Val Chapman (NTF) at the University of Worcester. It offers strategies for promoting inclusive teaching, learning and assessment within programmes of study taught at degree level (including foundation degrees).
http://www.scips.worc.ac.uk/challenges/auditory.html

The Open University provides a range of information on inclusive teaching and assessment across a range of disabilities, including deafness:
http://www.open.ac.uk/inclusiveteaching/pages/inclusive-teaching/recognising-barriers-deafness.php

Useful Contacts

University Contacts
Student Wellbeing Service
Student Services
Newcastle University
King's Gate
Newcastle upon Tyne
NE1 7RU

Tel: 0191 222 6000
 E-mail: https://my.ncl.ac.uk/students/contact

Students vary on how they wish to manage their course and liaise with staff. Some students choose to do it themselves; others prefer to use the services of the Centre staff, at least at the start of their course.

Outside the University

RNIB Student Advisor RNIB 224 Great Portland Street London W1N 6AA Tel: 0207 391 2151 Registered Charity No: 226227
Details of the equipment mentioned can be found in RNIB product guides, available from: 9
RNIB Customer Services PO Box 173 Peterborough Cambridgeshire PE2 6WS Tel: (0845) 702 3153 (price of a local call)

Tactile diagram suppliers
A raised diagram copying service (tactile diagrams) is available on a subscription basis from RNIB's disability access service: 01733 375000, businesslink@rnib.org.uk;

Heavily lined graph paper is available from the Partially Sighted Society Tel: 01302 323132 Email: info@partsight.org.uk;

Braille suppliers
Material can be transcribed into Braille through the following suppliers
Contact the RNIB on 0845 702 3153 or cservices@rhib.org.uk. More information at www.rnib.org.uk

A2i Transcription Services Ltd, a commercial company based in Bristol which provides large print, Braille and tactile diagrams amongst other products.
Telephone 01179 70 70 90 or email info@a2i.co.uk.
More information from www.a2i.co.uk

Useful Equipment
The range of equipment available varies from the simple and commonplace (felt tip pens), to the complex and sophisticated (scanners).
For more information on this, please contact RNIB (Tel: 020 7388 1266).