

Independent Learning

Self-managed study and resource-based learning can be undertaken using the Internet and other electronic-based resources. While traditional printed materials can be difficult for visually impaired, deaf and mobility impaired learners, the Internet can offer a helpful alternative. Search engines like Google® <<http://www.google.com>>, which utilise 'fuzzy logic' in searching, mean that dyslexic and deaf learners do not need to spell a word correctly to find suitable resources.

Alternative modes of attendance

Some learners cannot attend college full-time, or may need to have time off, for example, for medical treatment, depression or because of significant pain. In this case, ILT can offer opportunities for learners to keep in touch with college, keep up with course materials and access these at a time when it is suitable for them. This actually benefits all learners, who may miss information through short-term illness, or, for example, problems with child care. It will also assist learners to revise and reinforce face-to-face learning. Learning Platforms such as VLEs, intranets and online conferencing environments allow learners flexibility in college attendance and can help ensure that they stay in touch with the teaching team.

Due to a respiratory condition, Terry is confined to his house for large periods of the year. If the weather is cold or humid, he cannot stand being outdoors. Terry was able to complete his course entirely from online material combined with regular e-mailing of work, and regular telephone and e-mail responses from the course tutor. The role of the tutor is vital; it would have been a different and less satisfactory experience if prompt and sufficient tutorial feedback had not been forthcoming. As Terry lives roughly seven miles from the college, it was possible to arrange for his personal tutor to visit on a regular basis. These face-to-face sessions complemented the online and distance learning.

Registers will need to accommodate these alternative modes of attendance and give learners credit for work and learning undertaken remotely. Similarly, there needs to be an acknowledgement of the additional time and workload for the tutor.

Inclusive Learning and Teaching: ILT for Disabled Learners

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To receive this leaflet in alternative formats, contact <helpdesk@techdis.ac.uk>. An electronic version can be found at <<http://ferl.becta.org.uk/publications/techdisferl>>.



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Reasonable Adjustments: Offering Equivalent Alternative Learning Experiences to Disabled Learners

The Special Educational Needs and Disability Act 2001 (SENDA) places an obligation on all education institutions to make 'reasonable adjustments' to ensure that disabled learners are able to participate equally in all aspects of the educational environment. This obligation extends to online learning, the use of Information Learning Technology (ILT) and distance learning.

Making reasonable adjustments means that the college and practitioners should find ways of removing any unnecessary barriers for disabled learners. In many cases this can be done by altering the delivery method, providing assistive technologies or additional information and assistance. However, in certain cases, alternative learning experiences will have to be provided to disabled learners so they can achieve the same learning outcomes as their non-disabled peers.

Most well-planned learning activities, which do not have unnecessary 'built in' barriers, can be undertaken by disabled learners. Where learners cannot participate, and all reasonable steps to make the activity accessible have been examined, an alternative equivalent learning experience should be offered.

Many practitioners are daunted by the possible additional work or resources this may entail. While providing alternative experiences is a crucial aspect of conformance with the legislation, not all alternative solutions have to be time consuming or expensive, and ILT can offer

a range of ways of providing alternative learning experiences which can be utilised to support disabled learners.

The first step in deciding if an alternative learning experience needs to be offered is to examine the curriculum and learning outcomes. The following questions should be asked:

- Can the learner complete all aspects of the course successfully (including attendance, accessing courseware, required learning tasks and assessment)?
- What parts of the course have 'barriers' for different disabled learners (e.g. sound editing for deaf learners, field trips for mobility impaired learners)?
- What has to be done to make sure the learner can successfully complete the course?

There are three types of adjustments which can be made:

- Adjustments to the curriculum,
- Adjustments to content,
- Adjustments to the way learners access learning.

Below are some situations in which 'reasonable adjustments' may need to be made and examples of the use of ILT to overcome barriers.

Sean is a blind learner. 'Using speech, he is able to search for reference material using Encarta and Encyclopædia Britannica CDs. The scanner, running Orpheus software, enables him to quickly identify additional information that may be required without unnecessary Braille production. Sean is able to access the Internet for emails and research purposes and adds audible special effects to class work exercises. A recent English assignment involved the design of a slogan for a chocolate bar. Sean submitted a commercial advert using a combination of music downloaded from the Internet (sci-fi effects from Starwars/Star Trek) with his own voice-over and amusing anecdotes' (Ann Major and Cheryl Price, quoted from <<http://www.rnib.org.uk/education/vis32.htm>>).

Adapting the curriculum

Sometimes making reasonable adjustments means making sure that learners can demonstrate their abilities in an alternative way. This means that they substitute parts of the course for something which can be accessed and which still achieves the learning outcomes.

Jackie is totally blind and studying journalism. She uses various pieces of equipment to assist her in the classroom, for example a Braille note-taker/PDA (Personal Digital Assistant, a mini computer) instead of a tape recorder, which she can use to take notes and transfer to her PC at home. So far, Jackie has passed all her courses successfully.

She has undertaken shorthand units with the Braille shorthand as an equivalent to T-Line. Her Head of Programme has agreed to substitute a unit in photography for something less visual and the Desktop Publishing unit has also been slightly adapted for her. This has been done with the consent of the examining body, who have been helpful and accommodating.

Adapting content

Where learners can access all of the content of the course, but not individual parts of the lesson and learning materials, these may need to be adapted. It is worth remembering that some forms of online content will never be accessible for some users. For example, animation is not a suitable medium for use with blind learners. However, the practitioner has a responsibility to make the learning experience accessible, not necessarily the technology. This may mean simply providing the content in an alternative format or ensuring the appropriate assistance from a support worker.

Below are a number of tips on adapting content:

Off-the-shelf content

If you are buying content from a commercial company, or this is being provided as part of a learning platform, you should ask the vendors the following questions before buying:

- Is the content accessible to disabled learners?
- Can the material be accessed using assistive technology?
- Is the material compliant with the principles of SENDA or the U.S. Section 508?
- Are the content management system and system administration accessible for disabled practitioners and technical staff?
- Are there any interoperability problems with other systems?

For more information on this topic, see the **Learning Platforms** leaflet in this series.

National Learning Network (NLN) materials

The NLN e-learning materials are designed using a set of guidelines and requirements intended to ensure accessibility and usability. The materials should enhance and enrich learning for all – including those with physical, language, or cognitive disabilities.

A new online resource 'Using the NLN materials – a practical guide' includes advice on using the materials with groups of learners of differing ability, and includes a case study showing how they can be used as part of a blended learning approach with a group of learners with special needs. This guide is available from <http://www.nln.ac.uk>.

PowerPoint files

A conversion tool to make Powerpoint accessible, together with useful guidance, can be downloaded from <http://www.niad.sussex.ac.uk/training>.

Adobe Acrobat/PDF files

Adobe files can now be made accessible and a tutorial on creating accessible content can be seen at <http://www.adobe.com/products/acrobat/solutionsacc.html>.

HTML

Validated HTML should be accessible to all people as it will render the page cleanly and can be read by screen readers and text browsers. To check the accessibility of a web page or content for a learning platform, see the list of web page validation tools at the TechDis site: <http://www.techdis.ac.uk/seven>.

Graphics and Animation

Graphics and animation can be problematic for learners with impaired vision. It is good practice to describe graphics on web pages with alternative text. However, an alternative way of providing the information in the graphic is to add a description link. It is important to note in the description why you are showing this as well as describing the picture. This may also help the practitioner assess the usefulness of including the graphic. More information on this topic can be seen in the **Learning Platforms** leaflet of this series.

Adapting Word, Excel and other Windows applications

The Ferl Practitioners Pack contains many examples of Windows-based learning materials. Where there are significant access barriers for disabled learners, alternative ways of delivering this content are provided, including, for example, alternative suggestions for drag-and-drop functions in Word and captions for graphics files. If your college has the FPP pack, it is worth viewing these pages to see some of the suggested ways of changing the content or delivering the exercises.

Adjustments to the way learners access learning

Some disabled learners will require additional assistive technology or human support to access your teaching. Either of these could have an impact on your materials development and delivery. More information on assistive technology can be seen in a leaflet of the same title in this series.

'In a catering class for blind learners some technological applications are in use: talking scales allow the learners to accurately weigh out ingredients, rotary choppers are used rather than knives and liquid level indicators from the RNIB, which give an audible and vibrating signal when cups and containers are nearly full of liquid are useful when preparing cups of tea especially!' (Chris Barber, RSC-Yorkshire and Humberside).

If your learner is being assisted by a personal assistant, scribe or sign language interpreter, you will have to communicate and work with this colleague to develop a strategy to best support the learner. For example, you may need to consider the seating arrangements in a classroom or the length of time

it will take to undertake a reading exercise. For more information on working with sign language interpreters in the classroom see <http://www.wlv.ac.uk/teachingdeafstudents>.

Providing Virtual Learning Experiences

Laboratory work

Laboratory work can be particularly difficult for a range of learners. For example, learners with dexterity problems may find it difficult to place slides under a microscope or undertake experiments using small amounts of materials. Similarly, deaf learners are unable to follow instructions from the practitioner while looking at a microscope. Looking at these practices virtually (where they can be studied in close up or from further away, over again and in advance of the 'real thing') can be a great asset.

For learners with particular medical conditions and allergies who could not handle some of the substances used in lab work, undertaking virtual lab work can be the difference between demonstrating their ability and failing the course.

For an example of alternative lab work see <http://curry.edschool.Virginia.EDU/go/frog/menu.html>.

This site contains a virtual frog dissection. Learners can see the dissection step-by-step, gain further information and learn the practice, as well as the outcomes, of the dissection.

Field trips and visits

Field trips and visits can be enormously educationally beneficial for learners and allow students to learn in situ. Although wherever possible disabled learners should go on real field trips and visits, where this is impossible a virtual field trip may be the answer. JISC has produced a Virtual Field Course <http://www.geog.le.ac.uk/vfc/> and this can be used with all learners or with disabled learners only. (The material is not yet suitable for use with blind or visually impaired students.) Virtual field trips can benefit all learners as it may be impossible to take a learner group abroad or away overnight. Using these resources with a whole group of learners will also include, rather than exclude, disabled learners.

A portal site for virtual field trips can be found at <http://surfaquarium.com/virtual.htm>.

This site contains many virtual field trips and visits, but also includes a discussion on the pedagogy of using virtual field trips. Some examples of virtual learning experiences from this site are visits to the Middle Ages and the South Pole, virtual microscopes, a cow's eye dissection and the functions of the human heart.

'In cases where locations cannot be accessed, alternative learning experiences are provided, for example by using videos, slides and overhead projector transparencies of localities, along with samples of rocks and fossils, as appropriate. These can also be used for all learners on days when weather conditions make sites inaccessible for all. A virtual field course is also being developed on CD-ROM' (G. Easterbrook, Open University, quoted from <http://www.glos.ac.uk/gdn/disabil/mobility/casestud.htm>).

Another example of allowing learners to explore an environment in advance of letting them try it for themselves is Dewsbury College's virtual kitchen, where learners can see videos of a fish being filleted before attempting the task themselves. Providing virtual access in advance has significant health and safety benefits. For example, hazards in a hairdressing salon can be simulated and demonstrated on screen without the risk of damage to learners or the salon.