

Designing Accessible teaching materials

As the number of disabled students entering higher education increases, pressure is growing on departments to tailor their teaching methods so that they do not present unnecessary barriers to access. Including disabled students does not mean mountains of additional work and will increase the quality of higher education for all students. Also, there is no reason why providing access to the curriculum for disabled students means a drop in standards. If anything it should lead to an increase in the ability of universities to respond to a student population that is becoming increasingly diverse.

Previously many teaching departments have responded to disabled students in a reactive manner resolving issues of access for individual students as the need arises. However, growing numbers mean that most lecturing staff are likely to come across a disabled student in every new cohort. Changes to legislation also mean that all sections of the university need to respond in a proactive manner developing policies and provision for these students. Issues of access need to be considered from admissions and marketing, course design and assessment criteria to career opportunities and work placements. In this article we briefly examine some of the issues relevant to course designers and describe some of the methods that will be useful in designing accessible course materials.

Statistics

Figures from the Higher Education Statistics Agency show that 4% of students in higher education in 1997 were disabled. The last Labour Force Survey in Autumn 1999 shows that under the definition of the Disability Discrimination Act 1995, 20% of the work age population in the UK is disabled. It seems reasonable therefore to assume that there is some under-representation of disabled people in higher education.

Models

Recently, organisations of disabled people have forwarded an alternative definition and model of disability that focuses on the attitudinal, physical and societal barriers that restrict people with impairments from participating equally in all aspects of their lives (Oliver 1990). An example illustrates this approach - a person in a wheelchair is disabled not by their impairment but by the lack of accessible parking spaces and toilet facilities, poor access provision to public buildings and segregated education.

This model is known as the 'social' model and contrasts with a more traditional 'medical' model of disability which focuses on an individualistic approach - disabled people are often treated by medical intervention and by an array of professionals and are seen to be helped to overcome the physical effects of their impairments.

Legislation

In the HE setting, universities which take the social model as an overriding principle will develop an approach to disability which includes all sections of the university in the planning and provision of an accessible environment. Recent legislation - the Special Educational Needs and Disability Act (SENDA) - means that universities now have :

- a duty not to treat disabled student less favourably, without justification, for a reason which relates to their disability; and
- a duty to make reasonable adjustments to ensure that people who are disabled are not put at a substantial disadvantage in accessing education.

This includes the teaching environment and covers aspects such as accessible materials, online learning delivery, lectures and seminars and assessment methods. It is important therefore that academic staff take a lead role in the design of an accessible curriculum.

Assessment issues

Debate and concern has arisen in HE about the possibility of a drop in academic standards due to the provision of alternatives to the assessment methods and that these may lead to an unfair advantage for disabled students. Departmental staff can avoid some of these problems if they begin to think about assessment criteria at the course design stage. Assessment criteria should map onto learning outcomes and a variety of assessment methods should be used. When developing both assessment criteria and learning outcomes course designers should be absolutely clear about the purpose of the course, the necessity of the learning outcomes and teaching strategies and the necessity of the methods of assessing these learning outcomes (Scott 1997). If a clash occurs between the ability of the student and the course design it must not be because of unnecessary barriers to learning.

Additional support is often less controversial from an academic point of view. For example, most people are happy for a blind student to use assistive technology in an exam or for someone with chronic pain to take breaks. However, these arrangements often cause concern for administrators because of the allocation of resources into areas such as providing separate rooms and the costs of assistive technology and additional invigilators.

Learning materials

When designing accessible learning materials, course designers should consider access to the written word, visual images and the spoken word.

Written word

Many disabled students have difficulties accessing the written word (e.g. dyslexic student, visually impaired students). Perhaps the most useful aid to learning for these students is to produce copies of any learning materials on a computer disk. Most

disabled students in higher education will have access to a computer with specialist software and they can use this to access the materials produced. If a student makes a specific request for large print the recommended size is at least 14 pt (we have produced a version of this newsletter in that size). Dyslexic students also benefit greatly from materials produced on coloured paper, generally a pastel shaded colour will help. Finally try to use paper with a matt finish as this reduces glare. If you are producing written materials for the Web you should try to follow accessibility guidelines such as those produced by the W3C organisation (see [Iris Manhold's article](#)).

Access to visual images

Students with visual impairments will find visual information difficult to access and you may need to complement any materials with an auditory description or a transcript on disk. If you have a visually impaired student in your class it does not mean that you can no longer use charts, graphs and graphics. Remember not to use descriptions such as 'and this effect has been vindicated as you can see from the graph'. In the case of a graph you could provide a verbal description of the axes, statistics and shape of the curve. Sometimes a visually impaired student might access materials by using tactile diagrams (raised versions of pictorial information). These are produced by specialist units but can be costly to obtain.

Access to the spoken word

Many students who are deaf or hearing impaired will need video material subtitling or will require a written transcript. Students with hearing impairments have varying needs and use vastly different methods to communicate. It is estimated that someone who lip-reads is only able to read 30-40% of visible speech movements and this can be reduced for unclear speakers. Don't assume therefore that a student who lip-reads is understanding everything that is said. Most students will need to supplement their hearing with a note taker or a British Sign Language communicator.

Many disabled students are unable to follow lectures and take comprehensive notes at the same time. Therefore many students may need to use a tape recorder.

Universal Design

Universal design, is design that provides access to objects, technological devices, urban spaces and learning environments, for as broad a range of people as possible without the need for assistive devices or where this is not possible it is at least compatible with the use of assistive devices.

Designers often find that providing for disabled people has beneficial effects for a range of people e.g. a ramp has benefits not just to people who are traditionally considered as disabled but also to the elderly, children, people with prams and people delivering

heavy parcels. The approach in the classroom has become known as universal design for learning. Orkwis (1999) has described this approach :

'A more efficient way to provide student access is to consider the range of user abilities at the design stage of the curriculum and incorporate accommodations at that point. This 'built-in' access for a range of users, those with and without disabilities, is the underlying principle of universal design.'

If universal design is used disabled students will find that many of the adaptations to the learning environment that they often have to request through the disability office are already part of the overall instructional design. Many of these requests are for such things as untimed tests, notes, prepared materials before class, and study guides. As Silver et al (1998) note 'such accommodations are typically helpful to all students, and in fact may be representative of effective instructional practices'.

Most teachers want all students to do well on their courses and want to be responsive to the needs of all their students. Universal design offers a way forward for us all.

References

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This article has been adapted from a chapter that will be available in a series of books on Producing Quality Learning Material ed. F. Lockwood, Routledge Press