

8. Laboratories, workshops and other practice-based environments

► **Who might find this checklist useful?**

All academics, technical and demonstrator staff involved in teaching and learning in laboratories, workshops and other practice-based environments, admission tutors, estates, Health and Safety Committees, DSA assessors and new staff on induction.

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► What the SENDA Code of Practice requires

5.6 Responsible bodies should not wait until a disabled person applies to do a course or tries to use a Service before thinking about what reasonable adjustments they could make. Instead they should continually be anticipating the requirements of disabled people or students and the adjustments they could be making for them (to):

- teaching, including classes, lectures, seminars, practical sessions
- curriculum design
- research degrees and research facilities
- learning facilities such as classrooms, lecture theatres, laboratories, studios, darkrooms, etc.
- learning equipment and materials such as laboratory equipment, computer facilities, class handouts, etc
- information and communication technology and resources. (3.14)

Example 6.20A

A student with AIDS is on a Chemical Engineering course. He does not want other students to know of his condition. His condition means that he sometimes needs to have time off. His tutors have offered to arrange extra time in the laboratory for him after hours to make up for the time he misses. However, he has refused this on the grounds of confidentiality. Instead they offer to provide him with extra lecture notes. Although this adjustment is less effective, it is likely to be lawful.

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● **What the QAA Code of Practice for Students with Disabilities recommends**

Precept 3

Institution should ensure that facilities and equipment are as accessible as possible to disabled students.

Institutions should consider the requirements of disabled students in such matters as:

- the height and layout of classroom tables and laboratory benches
 - supporting access around the campus with appropriate signage and information, such as large print and Braille notices
 - the design and layout of seating especially in...computer laboratories
 - ease of use of equipment in laboratories, computer and teaching rooms
 - alternative safety systems such as flashing fire alarms or vibrating pagers.
(extract)
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What students say about current practice

Anna - Science - dyslexia and Meares Irlen Syndrome

We are very lucky in the department. The technicians have been really helpful to me. I am always allowed to use one of the post-graduate research microscopes that we wouldn't usually have access to. They have also arranged to get a blue filter to put on top of the light source which helps cut out the glare and is much more restful on my eyes.

Aiden - Technology - visual impairment

Some of the software which is integral to our computer course, isn't compatible with my enabling technology. Some of my systems analysis assignments use packages that are difficult to navigate, where scanning is impossible. They use diabolical fonts and you can't change the background colours. Unfortunately I have to use them a lot. I can't even use the mouse wheel to navigate it. Sometimes I end up with one entity on the screen when the overall picture is a complex systems map of ellipses and connecting systems lines. I even have the courseware on my own system but it seems to crash a lot.

Jan - Science - visual impairment

In one of our practical sessions I was the one who stuck their hand up and said, "I can't read this". So the lecturer got it enlarged and did about 10 sheets and he put them down and all of a sudden 10 sheets disappeared because nobody could read it. Nobody else but me was prepared to say anything and it's a shame that it wasn't done in the first place.

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* What staff say about current practice

- We organise a familiarisation programme for disabled students so that they can have a good look at the workshop space and all the equipment. We run through the health and safety issues and ask the students what they are concerned about. They are invited individually which is more time consuming but when we tried it as a group activity we felt that the students were much more reticent to participate. Some don't turn up at all.
- We have been liaising with the disability advisor for some years now and this has been crucial for our understanding of the kinds of technology available for disabled people. Since the beginning of the last academic year we have had a member of the lecturing staff who has taken responsibility for keeping abreast of specialist technology, ergonomic devices and such like.
- We have a student who could do with a computer monitor on a wall bracket and a different height desk. Who's going to pay for this? Is it the department, the disability service or the DSA?

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Preparation

What is the overall procedure for ensuring that staff are aware in advance of the presence of a disabled student on their course?

By what method do the staff become aware of the implications of a particular disability on an individual student's teaching and learning needs? In particular how do staff become aware of the "reasonable adjustments" required to make laboratories, workshops and other practice-based environments accessible, while remaining in line with health and safety legislation?

Is the course documentation made available well ahead of sessions and has a systematic approach been taken to make it available in an accessible and plain language format for a range of disabilities?

➔ **Go to Preparing documents for printing, visual display and electronic dissemination.**

Is sufficient time available for students to obtain texts on audio tape or Braille?

What training do staff members receive in order to be competent to organise and monitor the learning environment for disabled students, to meet the learning outcomes and to comply with disability, and health and safety legislation, etc?

Are staff aware of the issues relating to positive communication?

➔ **Go to Appendix I: Positive communication.**

"Reasonable adjustments" and the provision of technology and helper support

Prior to working in practice-based environments has it been established that students have been offered the opportunity to declare a disability?

Has early discussion taken place with the HEI's disability support service and/or a specialist external advisor, to assist in organising assistive technologies, learning support and special funding arrangements through the DSA? Is this initiated by the student? How are they informed about this? Has this taken place at information interview or prior to entry?

What are the funding issues for making "reasonable adjustments"?

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Is the learning environment supported with any specialist technology, e.g., induction loops, screen reading software, CCTV, magnification aids, etc., and if so is it properly installed and maintained?

Is there a member of staff with responsibility for accessing information about specialist disability aids, with experience of their application and potential?

Student induction

Are disabled students provided with an individual orientation to the laboratory, workshop or other practice-based environments, including the equipment and health and safety procedures?

Are there opportunities for organising pairing or 'buddy' arrangements with other students?

Auditing existing facilities for accessibility and to make "reasonable adjustments"

Has an audit of the suitability of all floor and work surfaces, seating arrangements, equipment, switches, taps, handles, display features, lighting, etc., etc., been conducted to support "reasonable adjustments" in the context of the standards set out in the literature promoting accessibility? At departmental level, how often is this evaluated and who has responsibility?

See the accessibility documentation listed below in the Additional sources of information.

When considering the viability of "reasonable adjustments" is the disabled student fully involved in the discussions?

"Reasonable adjustments" to fixed features

Where fixed features are fitted, e.g., heavy equipment, fume cupboards, sinks, etc., could a range of safe standing or sitting surfaces be provided?

Is it possible for larger pieces of equipment to be placed on a lower workbench to promote accuracy and safety?

"Reasonable adjustments" to other features

Is it necessary to relocate door handles and shelving for disabled people with restricted reach?

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Is it necessary to change the width of benches to allow a disabled person to have a controlled reach of electrical power points, taps and other controls?

Are the 'corridors' between benches sufficiently wide to allow someone with a physical disability or a wheelchair user along them, or do they need modifying?

Is it possible to provide individual adjustable workstations for disabled students to reflect their needs and the tasks being performed?

Is there a need to acquire specialist equipment or modify existing equipment?

Do special arrangements need to be made to accommodate a medical/non-medical helper (extra pair of hands), reader or interpreter, or guide dog, etc.?

What "reasonable adjustments" need to be made to recognise the organisational implications of student absence for disability related reasons?

Power and water supplies

For disabled people to have controlled reach of power and water supplies, e.g., wheelchair users, people of short stature, those with difficulties of balance and those with upper limb disorders, do switches and taps need to be moved (subject to health and safety requirements)?

Can power poles be situated at the corners of workbenches while still remaining safe?

Are the switches fitted of the push, rocker or easy lever style, and are they easily distinguishable from the wall colour? Do the taps incorporate a capstan design?

Are flexible power and gas lines in place to improve accessibility?

The visual dimensions

Is there a procedure for ensuring that the visual aspects of laboratories, workshops and other practice-based environments include the following:

- that an appropriate amount of light is available for the tasks
- that special non-glare task lights are supplied as required

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- that overhead lights have useful cut off diffusers
- that the available light is evenly deployed
- that there are no areas of deep contrast, pools of light and/or shadows
- that there is no glare or reflection obscuring surfaces or displays?

To counter glare and reflection problems, have modifications to the design of windows been considered, e.g., for the inside anti-glare filters, blinds or curtains in a matt finish and/or for the outside, light reflecting awnings?

Accessibility of computers, displays and print outs

Are staff ensuring that software compatibility issues between assistive technology and courseware are being addressed, e.g., for those students using screen readers and text enlargement software?

What arrangements are being made for computer based assessments (CBA)?

➔ **Go to Assessments.**

Has an accessibility review been made of computer monitors, measurement markings, LED and other equipment displays?

Are the LED displays correctly positioned and adjusted, at the right height and angle, and how are they lit?

Are the display characters and symbols in a Sans Serif font, point size 12 or above, using adequate line spacing and an accessible colour contrast between text and background? Is there a clear delineation between potentially confusing characters such as O and 0, S and 5?

➔ **Go to Preparing documents for printing, visual display and electronic dissemination.**

Has the position of equipment relative to the outside windows been reviewed for visual accessibility? Is any equipment facing a window and receiving excessive glare, or does any display have its back to a window thus creating high contrast?

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Health and safety

Is there a procedure for regular risk assessments to be undertaken to ensure the health and safety of disabled students and to ensure the health and safety of others in relation to disabled students?

What "house keeping" system is in place to prevent obstructions, spillage and other hazards that may be particularly dangerous to disabled people?

If required, is there a nominated individual such as a technician, with responsibility for the safety of a disabled student. Is there a reserve person responsible in circumstances of absence?

What procedures exist for monitoring student use of equipment, etc. during times when the student is using medication?

Are safety notices clearly displayed in an accessible format? Does this include instruction and workshop manuals, and health and safety documentation?

➔ **Go to Preparing documents for printing, visual display and electronic dissemination.**

Are operating buttons, taps, switches and containers of hazardous materials clearly labelled to include raised relief symbols or Braille?

Are floors well maintained and without unnecessary slopes or raised sections?

Does standard protective equipment and clothing, e.g., safety glasses, protective gloves, laboratory coats, masks, etc., need to be adapted to meet disabled user needs?

Are alarms and safety devices available in both auditory and visual forms, e.g., clearly audible and obviously distinguishable from other sounds and visually available as well?
Are vibrating pagers in use?

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Learning outcomes and virtual practices

Are there opportunities for staff and disabled students to explore alternative ways of meeting the required learning outcomes?

Are there circumstances where "reasonable adjustments" are not possible, and if so can they realistically be substituted through the use of virtual element?

Student evaluation

Is there a system in place for disabled students to evaluate the learning opportunities provided by laboratory and workshop experience?

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+ Additional sources of information

Access Audits. A guide and checklist for appraising the accessibility of public buildings, (no date), Centre for Accessible Environments, London.

Barrier Free Design, (1996), Holmes-Siedle, J., Butterworth Architecture, Oxford.

Building Sight, (1995), Barker, P., Barrick, J., and Wilson R., HMSO in association with the Royal National Institute for the Blind, London.

Designing for Accessibility: an essential guide for public buildings, (1999), Lacey, A., Centre for Accessible Environments, London.

Disabled Workers in Laboratories, (1998), Environment, Health and Safety Committee, Royal Society of Chemistry, London

Science Laboratory Access Manual. A guide to designing a laboratory for access for people with disabilities, (1992), Best, Victorian University of Technology, Melbourne.
Available at <http://www.deakin.edu.au/extern/rdlu/lab.pdf>

Sign Design Guide. A guide to inclusive signage, (no date), Baker, P. and Fraser, J., JMU Access Partnership, London.

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