

Developing an inclusive curriculum for
students with mobility impairments



Geography Discipline Network (GDN)
Higher Education Funding Council for England
Improving Provision for Disabled Students

INCLUSIVE • CURRICULUM • PROJECT

<www2.glos.ac.uk/gdn/icp/>

The Inclusive Curriculum Project (ICP) aims to develop, disseminate and embed resources for supporting disabled students studying geography, earth and environmental sciences in higher education and to transfer the generic lessons widely to subject-based academics, educational developers, learning support staff and disability advisers. Its primary outputs include:

- the ICP Guide series - Nine complementary guides, aimed primarily at staff in geography, earth and environmental sciences, and one guide aimed at students:
 1. Issues in developing an inclusive curriculum
 2. Developing an inclusive curriculum for students with mobility impairments
 3. Developing an inclusive curriculum for visually disabled students
 4. Developing an inclusive curriculum for students with hearing impairments
 5. Developing an inclusive curriculum for a) students with mental health issues; b) students with Asperger Syndrome
 6. Developing an inclusive curriculum for students with dyslexia and hidden disabilities
 7. Developing an inclusive curriculum: a guide for heads of departments and course leaders
 8. Developing an inclusive curriculum: a guide for lecturers
 9. Developing an inclusive curriculum: a guide for departmental support staff (i.e. administrators and technicians)
 10. To a Degree: a guide for students with specific learning difficulties, long-term medical conditions or impairments
- a student survey report: 'The experience of disabled students in geography, earth and environmental sciences of teaching, learning and assessment in HE';
- a set of case studies on the experience of disabled students of teaching, learning and assessment in HE, and the experience of departments and disability advisory units of supporting the learning of disabled students.

All of these outputs are available via the GDN website at <www2.glos.ac.uk/gdn/icp/>. Both the Guide series and the survey report are also available in hard copy format via the GDN Publications Office. A complete set of the ICP Guides will be distributed in hard copy to all Higher Education institutions in England and Northern Ireland at the end of the project.

Project Team

Lead site

University of Gloucestershire: Professor Mick Healey; Michele Hills; Dr Jacky Birnie; Anna Donough; Dr Phil Gravestock; Dr Tim Hall; Dr Margaret Harrison; Carolyn Roberts

Consortium

Lancaster University: Dr Gordon Clark; Terry Wareham; Rosemary Turner
Liverpool John Moores University: Naseem Anwar; Dr Clare Milsom; Sue Thompson
Middlesex University: Professor Ifan Shepherd; Sue Bleasdale
Open University: Dr Jonathan Leach
Oxford Brookes University: Professor Alan Jenkins
University of Plymouth: Professor Brian Chalkley; Judith Waterfield

Advisory Panel

Dr Rita Gardner (Royal Geographical Society (with the Institute of British Geographers))
Professor Graham Gibbs (University of Oxford)
Dr Annie Grant (University of East Anglia)
Judy Hartley (Griffith University, Brisbane, Australia)
Professor Brenda Smith (Higher Education Academy)



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Developing an inclusive curriculum for students with mobility impairments

Clare Milsom, Naseem Anwar and Sue Thompson
Liverpool John Moores University

Series edited by Michele Hills and Mick Healey
University of Gloucestershire

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The content of this guide has been developed in good faith, but the authors and their institution cannot be held responsible for the actions which readers may take in response to the advice contained herein.

This guide is dedicated to
Professor Vince Gardiner 1948 – 2002

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About the authors

Dr Clare Milsom is a Principal Lecturer in Geoscience, and Learning and Teaching Co-ordinator in the School of Biological and Earth Sciences, Liverpool John Moores University.

Naseem Anwar is Senior Adviser, Equality and Policy Development, Liverpool John Moores University.

Sue Thompson is Director of Learning Development, Liverpool John Moores University.

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Editors' Preface

This guide is one of a series of ten published by the Geography Discipline Network (GDN) as part of the **GDN Inclusive Curriculum Project** (ICP), a three-year initiative running from January 2003 to December 2005, funded by the Higher Education Funding Council for England's *Improving Provision for Disabled Students* programme.

The ICP Guide series is written primarily for academics, educational developers, learning support staff and disability advisers supporting disabled students studying geography, earth and environmental sciences in higher education. In addition, one guide is aimed at helping disabled students to optimise their experience of higher education. The project builds on the success of an earlier HEFCE-funded GDN disability project, *Providing Learning Support for Disabled Students Undertaking Fieldwork and Related Activities*. This project, unbeknown to us at the time, broke new ground. Adams (2002), the Director of the National Disability Team (NDT), subsequently stated that:

'The Geography Discipline Network project was, for a variety of reasons, an extremely important project:

- a. It was one of the first disability-funded projects that exclusively addressed issues concerned with teaching, learning and assessment.*
- b. It was led by academic staff in partnership with disability practitioners – this kind of partnership has signalled a real shift in thinking regarding disability issues.'*

The project, as is the current one, was undertaken by the Geography Discipline Network, a consortium of old and new universities based at the University of Gloucestershire, whose aim is to research, develop and disseminate good learning and teaching practices in geography and related disciplines.

At the beginning of the Inclusive Curriculum Project, we wanted to capture the student voice. Accordingly, we undertook a survey of disabled students studying geography, earth and environmental sciences in the consortium institutions (Hall & Healey, 2004). The survey was supplemented by case studies of the learning experiences of disabled students and the different ways in which departments and tutors have supported them, which are also available on the GDN website at <www2.glos.ac.uk/gdn/icp/>.

Awareness of the need to develop inclusive practices, which provide equal opportunities for disabled students in various elements of their courses, is spreading throughout Higher Education Institutions (HEIs) in the UK. This has been stimulated by the Quality Assurance Agency (QAA) *Code of Practice - Students with Disabilities*, published in 2000, and the extension of the Disability

Discrimination Act (1995) to education through the Special Educational Needs and Disability Act (2001), later incorporated into Part IV of the DDA and the Disability Discrimination Act (2005).

The ICP project focuses on the fundamental principle of inclusivity, whilst addressing the day-to-day practical realities of supporting students with a wide range of specific physical and mental difficulties. Although the series is written from a disciplinary perspective and some guide titles address particular areas of disability, the project provides guidance which offers transferable lessons for what is good practice throughout teaching and learning in higher education.

Despite using medical categories for describing impairments, we are committed to emphasising a social model to exploring disability, which examines the barriers to disabled students which society creates. The distinction between the medical and social model is important because it shifts the responsibility for improving the provision for disabled students from the individuals themselves to society, and the strategies and policies that higher education institutions and their constituent departments develop and enact. However, we support recent modifications to the social model which emphasise the reality of the lived experience of disabled people, and we are sympathetic to calls to construct a more adequate social theory of disability which recognises that everyone is impaired (Shakespeare & Watson, 2002). The focus of this series of guides is on identifying the barriers that disabled students face to participating fully in the curriculum and the ways in which institutions, departments and tutors can help to reduce or overcome them.

The GDN ICP team comprises a well established group of discipline-based academics, educational developers and disability advisers. Each guide has been written by a specialist author or team of authors, based on outline content and structure discussed by the team as a whole, and has been reviewed in detail by nominated representatives from the team. Each draft was also circulated to the whole team and a panel of external advisers for comment before final editing.

Rather than adopt an imposed standardised format across the series, each authoring team was given freedom to develop their guide in the way they felt most appropriate. This also applied to the much-exercised question of appropriate language. Editing, therefore, has been intentionally a 'light touch' process, so individual guides in the series may vary from time to time in relation to language protocols adopted. In terms of layout and presentation for both printed and web-based versions of the guides, however, the editing team has attempted to follow nationally-established accessibility guidelines as set out, for example, by the National Disability Team <www.natdisteam.ac.uk/Accessible%20printed%20documents.doc> and TechDis <www.techdis.ac.uk/index.php?p=9_4>.

The project was undertaken in consultation with the Higher Education Academy Subject Centre for Geography Earth and Environmental Sciences (GEES). It has the strong support of the main professional associations and representatives of Heads of Department in the geography, earth and environmental sciences sector:

- the Royal Geographical Society with the Institute of British Geographers (RGS-IBG)
- the Geological Society (GeoSoc)
- the Conference of Heads of Department in Geography in Higher Education Institutions (CHDGHE)
- the Committee of Heads of Environmental Sciences (CHES)
- the Institution of Environmental Sciences (IES)
- the Committee of Heads of University Geoscience Departments (CHUGD).

We would like to thank the many individuals who have contributed to the ICP project and to making this series of guides possible. In particular, we recommend to our readers the stalwarts of the Geography Discipline Network project team, many of whom have over many years uncomplainingly devoted more of their time than we could reasonably expect to producing high quality materials and sound advice. We would also like to acknowledge the project Advisory Panel, the National Disability Team and the numerous colleagues who helped to keep the project on track and provided additional resources when necessary.

The net outcome of recent quality assurance and legislative changes is that HEIs need to treat disability issues in a more structured and transparent way. In particular, we may expect to see a relative shift of emphasis from issues of recruitment and physical access to issues of parity of the learning experience that disabled students receive. The implication of this shift is that disability issues 'cannot remain closed within a student services arena but must become part of the mainstream learning and teaching debate' (Adams & Brown, 2000, p.8). But there is an opportunity here as well as a challenge. As we become more sensitive to the diversity of student needs, we can adjust how we teach and facilitate learning in ways which will benefit all our students.

Michele Hills and Mick Healey

University of Gloucestershire
October 2005

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Adams, M. & Brown, P. (2000) '*The times they are a changing*': *Developing disability provision in UK Higher Education*, paper presented to Pathways 4 Conference, Canberra, Australia, December 6-8.

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Available at: <www2.glos.ac.uk/gdn/icp/survey.htm>.

Shakespeare, T. & Watson, N. (2002) The social model of disability: an outdated ideology? *Research in Social Science and Disability*, 2, pp.9-28.

1 Introduction

'The greatest barrier to following any course or profession are other people. They often need to be converted, but after seeing a disabled student become successful, they are often the strongest advocates of accepting another student with a disability.'

(Jones & Hopkins in Powell, 2003, p.108)

This guide provides practical advice for staff to enable them to meet the learning and teaching needs of students with mobility impairments. Building on the work of Vince Gardiner and Naseem Anwar (2001), it covers all aspects of the curriculum, including fieldwork. In the same context as that used by Gardiner and Anwar, the guide concentrates on developing a truly inclusive approach rather than producing a list of 'top tips'. Vince Gardiner, an inspirational and valued colleague, and to whom this guide is dedicated, encapsulates the aim of the guide when he says

'We will not tell you how to get a student in a wheelchair up a mountain. But we will guide you in thinking about issues which have to be faced in accepting a student who uses a wheelchair on the course, in planning and executing fieldwork for that student, and in making appropriate arrangements, both academic and non academic. This might involve getting the student in a wheelchair up a mountain...but it might not.'

(Gardiner & Anwar, 2001, pp.2-3)

1.1 What are mobility impairments?

The popular perception and image associated with mobility impairments is that of a wheelchair. Indeed, the most popular international symbol associated with disability equality also equates to a wheelchair. Yet the reality is that in the UK, only 4% of all students with disabilities are wheelchair users.

'A mobility impairment is one which affects the bones, joints, muscles or nerves that effect movement. The term mobility impairment does not only apply to students who use wheelchairs, but also to those with upper limb disorders such as repetitive strain injuries (RSI) and arthritis, and those with medical conditions limiting mobility. A wide range of conditions may limit mobility, including hand function. These include paralysis, cerebral palsy and amputation. This guide should be treated as applying to the widest definition of mobility'

impairments, ranging from limited manual dexterity to paraplegia.'

(Gardiner & Anwar, 2001, p.2)

1.2 What is good for students with mobility impairments is good for all students

It would be a misconception to assume that students with mobility impairments are likely to be the sole beneficiaries of any modification made to the learning and teaching experience. The nature of most changes should enhance the quality of experience for all learners. Staff in responding to specific requests should aim to relate these to other students and how they may also benefit from this experience.

1.3 Models of disability

'It is simplistic to attribute problems about disability to individuals who are said to 'have' this or that disability when the reality is that many such problems disappear when the environments are accessible. And although there is little that staff in higher education can do to change the facts of the student's impairment, there may be scope for altering the environment of higher education, which, like any environment, may be disabling'.

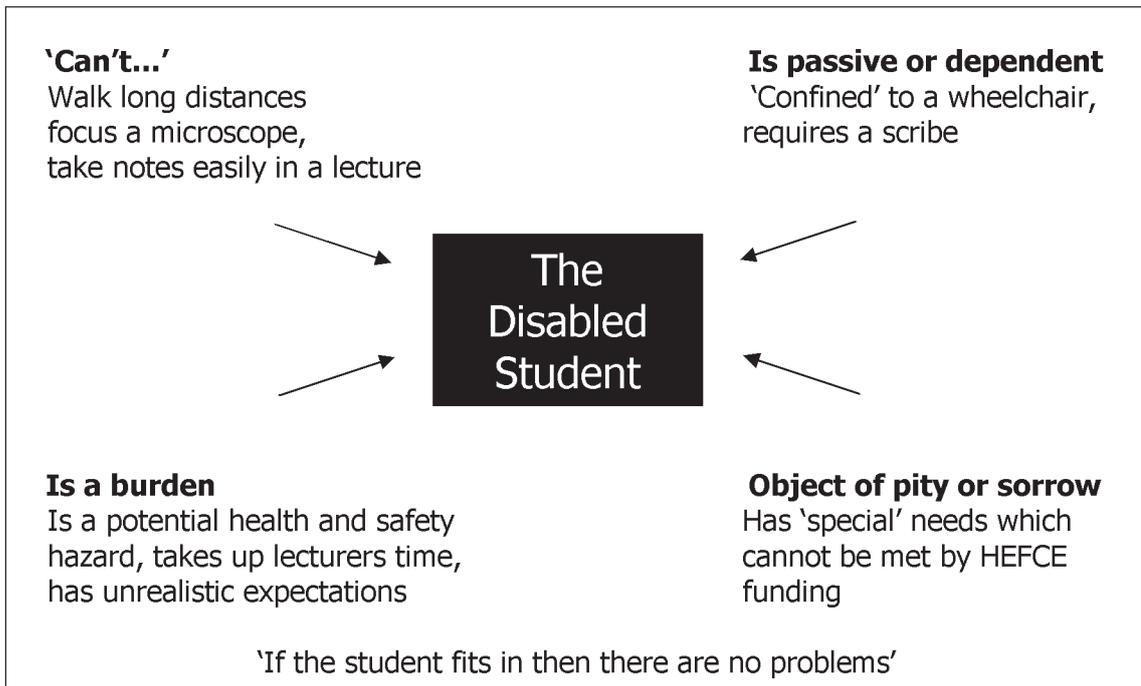
(Teachability Project, 2000, p.4)

The approach and understanding on disability equality is defined by three models.

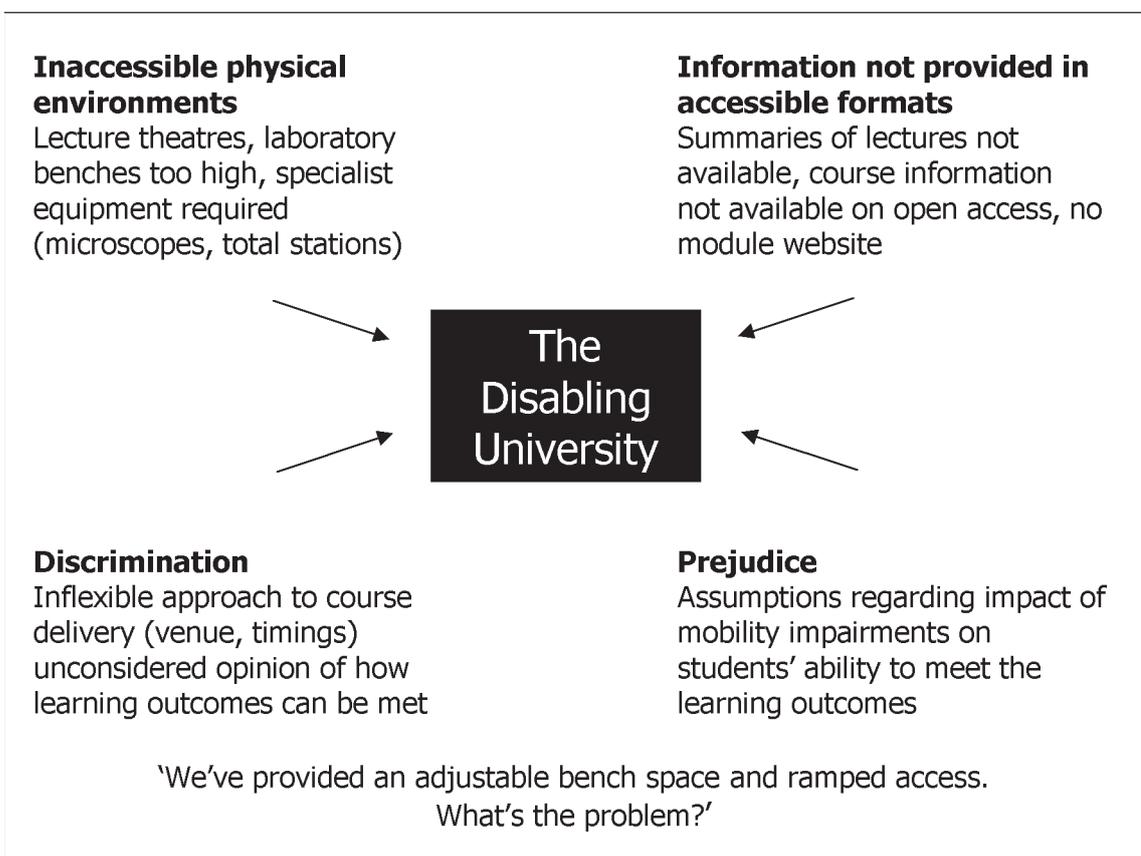
- I. Individual basis: A disabled person is seen as worthy of charity and pity.
- II. Medical criteria: The focus is usually on what is 'wrong' with people rather than valuing abilities. It restricts choice and takes power away from individuals.
- III. Social exclusion: Disability is re-defined in terms of oppression and discrimination and parallels race and gender. Under this model the focus is on barriers that prevent disabled people from effective participation. The emphasis is on society recognising and celebrating difference and attempting to be inclusive in all activities.

These models are further explored and presented in the following diagrams (models adapted from positive-equality.co.uk).

Medical Model of Disability: suggests that the student with mobility impairments is the 'problem'...



Social Model of Disability: shows that barriers within the University or the programme delivery are the real problem.



1.4 Terminology

People often have questions about appropriate **terminology**. You need not worry about talking to a student who is mobility impaired by mentioning the word 'walk'. People who use wheelchairs do 'go for a walk' or 'walk' to class, just as someone who is blind can 'see' concepts and ideas. Focus on the person rather than on the disability.

Words and phrases that are **not recommended** include 'wheelchair-bound', 'afflicted with', 'victim', 'suffering from' and 'invalid'. Wheelchair users are not tied to their wheelchairs and the term 'wheelchair-bound' implies that people who use wheelchairs are in some way restrained from movement, whereas a wheelchair offers the freedom to move around and is a valuable tool. 'Afflicted with' conveys a tragic and negative view of disability as does the word 'victim'. 'Suffering from' confuses disability with illness and also implies that a disability may be a personal burden. Invalid can mean not valid.

The point to remember is that language around disability equality is evolving so what was once acceptable may no longer be deemed appropriate and what is acceptable to one person may not apply to others.

1.5 Legislation and Codes of Practice

The inclusion of education in the Disability Discrimination Act in 2001 has resulted in the Disability Rights Commission publishing a Code of Practice for providers of post-16 education. This Code of Practice has been converted into a 'user's manual' by the South West Academic Network for Disability Support (SWANDS, 2002 <www.plymouth.ac.uk/assets/SWA/Sendadoc.pdf>) to enable universities and colleges to audit their provision and assess their compliance with the Act. In parallel with the legislative framework, the QAA Code of Practice, Section 3 relates to students with disabilities. The QAA Code is advisory and is concerned with the management of academic quality in higher education. Relevant sections of these codes are included (in boxes) in this guide.

The Disability Discrimination Act 1995 Part 4 states it is unlawful for universities to treat students with disabilities less favourably for a reason connected with their disability. Universities are required to take reasonable steps to ensure that disabled students are not placed at a substantial disadvantage in comparison with their peers. Whilst still responding to individual students' needs, the intention of this legislation is to be anticipatory. The geography, earth and environmental science curriculum must therefore be inclusive and accessible to all students.

It should be emphasised that the Act does not require a university to make any adjustments that would undermine the standards of an academic programme.

In order to ensure compliance with the Act, institutions and practitioners must review their programmes to ensure that all students have an equal opportunity to meet the programme, course and module learning outcomes.

Requirements of the Disability Rights Commission Code of Practice for providers of post-16 education and related services

4.26

The Act does not require a responsible body to do anything that would undermine the academic standards of a particular course. A responsible body may be able to justify less favourable treatment if it is necessary to maintain these standards.

6.3

The Act does not require a responsible body to do anything that might mean it cannot maintain academic or prescribed standards in a particular learning programme.

2 Issues for students and staff

2.1 Students

It is important in meeting the needs of students with mobility impairments that the new knowledge gained (where there is not an issue of confidentiality) should be shared with all students and staff so that their learning and understanding is enhanced. Disability equality is not only an ethical issue, but one that has legal underpinning. It is no longer a question of individual choice to exclude or not to meet appropriate needs, as this can now be legally challenged. It may be necessary to arrange specific sessions on disability awareness so that all staff and students acquire basic and consistent understanding. Students with mobility impairments need to be treated individually instead of assuming that all mobility impaired students have the same or similar needs (Hall & Healey 2004).

When Andrew was describing his experiences of university, a striking aspect was the loneliness and sense of alienation he felt, which was in part brought about because of issues of communication with other students. Particular examples he gave were:

- being paired with another student in practical work who rushed off when he thought he'd finished his work, leaving Andrew physically unable to repeat the experiment;
- finding tutorials unhelpful because he was not confident about contributing since his mobility impairment means he has also speech difficulties;
- holding back because he didn't want to be seen as different;
- missing out on discussing work and learning from peers when preparing assessments, which he feels has had an impact on his assessment marks.

This student has mobility impairments but arguably all he describes here could apply to any student. He is also a mature student and the student lifestyle of night clubs and bars holds no interest for him. These experiences highlight the importance of the tutor's role in raising the awareness of diversity within their student groups and of promoting a culture of inclusivity within

their programmes. This could mean building promotion of student diversity awareness into induction activities. It also requires consideration of how student participation and involvement is planned for and handled in group work and learner support activities.

It is important that students with mobility impairments discuss their needs with the staff as early as possible. Staff need to be sensitive in fostering an environment where students feel comfortable and able to disclose their disability.

When asked how staff could have helped him better, Andrew said he felt the key thing for staff was to really 'listen' and to 'hear' what he was saying. It's hard for him to talk about his disabilities; it makes it worse if he has to keep repeating it. What came across strongly is that he felt he had disclosed his disabilities but that staff have lacked awareness or didn't really understand what this meant for him.

Information relating to a student's disability is classified as sensitive, personal data under The Data Protection Act 1998. Therefore, staff must ask the student's permission before passing on any information to other staff in order to provide support for the student. The student needs to know who the information will be passed on to, and there will need to be procedures in place to ensure that sensitive and personal information is kept confidential.

An important consideration will be to ensure that all learning and teaching activities involve students with mobility impairments. Group-based learning and fieldwork ought to provide a consistent and quality experience for all students, so that students with mobility impairments are integrated with their peers during the course of their learning. There are clearly issues here for staff regarding the inclusivity of student participation and of diversity awareness raising for all students.

2.2 Staff

'The world's a scary place when you first come into the University'.

This could be the voice of any student, but here it is that of a third year student with mobility impairments describing the difficulties he experienced in communicating with staff. Not wanting to make a fuss or to be seen as 'different' made it hard for him to approach lecturers. His greatest difficulties were caused when staff lacked awareness and understanding of his needs, despite his having disclosed his disabilities,

'it's important to be heard the first time, it's hard having to tell people again and again...If someone blanks you or turns you down, then you don't ask again.'

Ensuring that the curriculum is inclusive and accessible has major staff development implications. At a basic level, there is a need for staff awareness of the legislative requirements, but at a deeper level, course teams are also likely to need support in building inclusivity and accessibility into their course design processes. Staff development provision needs to move beyond basic awareness-raising into understanding and practice.

There is a wealth of resource material, much of it easily accessible online, explaining legislative requirements and providing practical guidance on all aspects of curriculum design and delivery. Particularly helpful examples are referred to within this guide. A resource that focuses specifically on staff development is the DEMOS project's online materials for Staff Disability Awareness at <www.jarmin.com/demos>.

There is no shortage of resource support, but it is important to acknowledge that in the same way that students may find the world of university a scary place, staff are also likely to experience uncertainty when attempting to ensure the curriculum meets the diverse needs of all their students. While awareness raising activities have their place, departments and programme managers need to identify strategies for addressing staff development within the context of their curriculum design and delivery.

'My mobility difficulties are not immediately obvious. I don't use a wheelchair and I look strong and healthy, but I have difficulty in keeping up on rough terrain and got left behind in the first year field trip. I just wanted to go home and never come back. In the second year, I avoided modules that involved fieldwork.'

This student went on to describe two completely different experiences of fieldwork in his third year, one where the member of staff discussed his needs prior to the trip, resulting in a positive experience where he felt included. The other was a field trip to a zoo where he spent the whole day 'playing catch up' because he was not able to keep up physically with the lecturer and other students.

The student was clear that these contrasting experiences occurred not because one of his lecturers was being deliberately unhelpful or unsympathetic but because of a lack of awareness and specific

knowledge of his needs. An inclusive course team approach to staff development may have helped to ensure greater consistency in the student's experience.

3 Curriculum design

3.1 Introduction

This section presents an overview of the course design process and identifies key aspects for consideration. It is important that the programme specification should be inclusive and there are no unnecessary barriers for disabled students (QAA Code of Practice Section 3: Students with Disabilities: Precept 8).

Course teams will need to decide at the course design stage whether there are any programme requirements that present barriers to students with mobility impairments, and if so, whether these could be changed without compromising the programme standards or professional body requirements. Areas of most difficulty are likely to be in the practical aspects of the programme. Departments will need to ask themselves whether practical work can be taken by students with physical disabilities and whether there is a need to do all the practical work to fulfil course and any professional body requirements, for example, the number of days of fieldwork required for Geological Society accreditation. As well as issues of physical access, departments and course teams will also need to consider their admissions procedures, teaching staff responsibilities, safety matters and the potential for flexibility in course delivery, modes and patterns of study (Jones & Hopkins, 2003).

'It is incumbent upon higher educational institutions therefore to ensure that students with disabilities can participate fully in the curriculum, and that the kinds of educational activity contained within that curriculum have enough in-built flexibility to enable that participation'.

(Powell, 2003, p.9)

A useful guide with checklists for course development, programme planning, approval and review can be found in Chapter 4 of the South West Academic Network for Disability Support (SWANDS), (2002): www.plymouth.ac.uk/assets/SWA/Sendadoc.pdf.

3.2 Practical considerations

Most obviously, a major area of potential difficulty for students relates to access (steps and stairs, heavy doors, cramped spaces, narrow corridors, small lifts). In practical terms, course teams need to ascertain how accessible their buildings and teaching accommodation are for students with mobility impairments. This might involve making changes to venues and/or timings of classes.

Not all students with mobility impairments are wheelchair users. Students may have conditions that cause generalised weakness of the skeletal muscles or difficulties with manual dexterity which may affect their ability to access certain venues.

Lecture theatres have not been a problem to get access to and are relatively comfortable. Only issue is the Faraday building's front doors which are difficult to open.

Apart from fieldwork the main barrier Andrew has encountered has been the large heavy door of some lecture theatres.

Consideration needs to be given not just to how students will access teaching rooms, but also to how teaching accommodation might need to be adapted for students with mobility impairments, for example, ensuring that laboratories have adjustable benches for students who use wheelchairs.

Course teams will also want to consider how students with mobility impairments can access the full range of learning opportunities such as fieldwork and work placements. Organisers of field trips need to consider a variety of issues for all students including health and safety, organising transport, accommodation and cost implications. Adjustments might include considering possibility of low/easy terrain routes being arranged as an alternative, or changing the field site when a specific location is deemed inaccessible.

3.3 Learning resources

Course teams need to consider all the learning resources, for example, how students will access learning resource centres and whether they have any low-level counters, photocopying, scanning and PC facilities. Learning Resource Centres may also make arrangements for extended loans and postal loans. Access to off-campus learning support online will enhance flexibility for students in how and when they study. Students who are unable to carry books, files and other materials around with them need secure lockers. Learning technologies need to be assessed for their accessibility for students with mobility impairments. Assistive technology may be needed for physical difficulties such as speech-to-text (user dictation), text-to-speech (screen readers) and mouse equivalents. Course materials printed in 'comb-bound' format, which lies flat when opened, are easier to use for students with manual dexterity difficulties.

3.4 Learner support

The course team's strategy for learner support will need to take account of how staff communicate with students. Communication via email and through electronic noticeboards can be particularly effective in keeping students informed and in touch with their tutors and each other. Course handbooks should include information on the support that is available. Staff supporting students with mobility impairments will need to be aware of their individual physical and personal care issues and make the appropriate adjustments.

3.5 Assessment as part of curriculum design

Assessment should be an integral part of the course design process, not a bolt-on at the end. It is striking that the report analysing the findings of the first ever survey of disabled students in geography, earth and environmental sciences and related disciplines found that it was assessment, and not forms of teaching and learning, that caused the most difficulty (Hall & Healey, 2004). This suggests that getting assessment right is perhaps the most critical aspect of course design.

Ensuring assessment is inclusive of, and accessible to, all students may require making special arrangements or adjustments, but at a more fundamental level it could involve considering alternative methods of assessment.

3.6 Accreditation

Degree programmes in geography, earth and environmental science subject areas are not formally regulated by professional bodies. Departments may decide to apply for accreditation from appropriate professional societies but successful accreditation does not directly affect employment opportunities. For example, accreditation of a course by the Geological Society is not necessary to practise as a professional geologist.

3.7 A curriculum design checklist

Students with mobility impairments are no different from other students in that they will have the same range of learning styles and preferences, and it goes without saying that good curriculum design is inclusive of, and accessible for, all students. Adjustments made with particular students in mind are likely to be of benefit to the whole group.

Will students:

- Experience any difficulty in achieving the learning outcomes for this programme? If so, what adjustments can be made?

- Be able to experience the full range of learning opportunities?
- Have any difficulty accessing and using learning resources (including teaching rooms and laboratories, learning resource centres, learning technologies)?
- Be able to undertake all assessments for this programme?
- Have specific learner support needs?

Will the course team staff:

- Have the awareness, knowledge and skills necessary to support students with mobility impairments?
- Have an integrated approach for the roles of teaching, technical and learner support staff?
- Be knowledgeable about the range of support services provided by the institution and external bodies?
- Have identified their staff development needs and whether there is a strategy for meeting these?

Students' needs are individual and another set of questions that course teams might ask themselves are:

- Does the student use a wheelchair some or all of the time?
- Does the student's condition mean they have muscular weakness, loss of co-ordination, difficulties with manual dexterity, speech or visual difficulties?
- Does the student have difficulty in walking, lifting or general upper body mobility?
- Will the student's mobility impairment mean that they suffer from weakness and fatigue?
- Does the student have a personal assistant?

4 Course delivery

4.1 Introduction

The QAA Code of Practice Section 3: Students with Disabilities, states the requirements of universities in ensuring that disabled students have access to a learning experience comparable to that of non-disabled students. Sections of the code relevant to the delivery of programmes for students with mobility impairments are listed below.

Requirements of the Code of Practice for providers of Post-16 education and related services.

3.11

It is unlawful for bodies responsible for educational institutions to discriminate against disabled students in the provision of 'student services'. 'Student services' are any services that an institution provides or offers to provide wholly or mainly for students undertaking courses.

3.14 (extract)

Services might include:

- teaching, including classes, lectures, seminars, practical sessions;
- curriculum design;
- research degree and research facilities;
- learning facilities such as classrooms, lecture theatres, laboratories, studios, darkrooms;
- learning equipment and material such as laboratory equipment, computer facilities, class handouts.

Recommendations of the QAA Code of Practice Section 3: Students with Disabilities

Precept 3 (facilities and equipment - extract)

Institutions 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;
- ease of use of equipment in laboratories;
- the design and layout of seating especially in raked lecture theatres.

Precept 10 (programme delivery - extract)

The delivery of programmes should take into account the needs of disabled people or, where appropriate, be adapted to accommodate their individual requirements. Institutions should consider making arrangements which ensure that all academic and technical staff:

- plan and employ teaching and learning strategies which make the delivery of the programme as inclusive as reasonably possible;
- make individual adaptations to delivery that are appropriate for particular students, which might include providing handouts in advance.

Precept 11 (fieldwork and placements - extract)

Institutions should ensure that wherever possible, disabled students have access to academic and vocational placements, including field trips and study abroad. Institutions should consider ways of ensuring that the specified learning opportunities are available to the disabled students by:

- seeking placements in accessible contexts;
- re-locating field trips to alternative sites or providing alternative experiences where comparable opportunities are available which satisfy the learning outcomes.

4.2 Lectures

Good lecturing practice will benefit all students. An inclusive approach would be seen as a requirement not only for students with disabilities but the standard of good practice for all students. A good lecture is clearly structured, audibly delivered, appropriately paced and supported by meaningful handouts. It will involve interaction appropriate to the level of the students and meet the learning outcomes of the module/course/programme.

As some students with mobility impairments may not get to the lecture on time because of difficulties with lifts or transportation problems, important information should be repeated in a lecture to ensure that all students receive this information. This information should also be included in the module handbook and posted on accessible noticeboards or electronically.

We have only had one student in a wheelchair. There are reports that in crowded lifts people often will not make room for people in wheelchairs. The Disability Officer has recently organised various groups to follow certain routes around the School accompanied by someone with a mobility impairment to see if we could reach certain areas. We noted various problems e.g. lack of lifts, poor signing, decorative cobbled floors, too little time between lectures for changeovers, which the School will have to address.

Students with writing difficulties may need to be provided with copies of the notes, preferably in advance of the lecture. These notes could be made available to all students through a virtual learning environment, university intranet or module webpage. Some students with mobility impairments will have a note-taker. It is useful if the note-taker has a knowledge of the subject area. In some institutions, students on the same programme are asked to volunteer for this purpose. Taping lectures can be useful, but retrieving the information from the tapes can be very time consuming.

'At first I didn't have the sense to 'come clean' and ask for lecture notes - as hands really hurt, then I did. Most lecturers were really thoughtful'.

Lectures in geography, earth and environmental sciences programmes have particular aspects that may become barriers to learning. Most lectures have a strong visual component delivered as slides or as diagrams on overheads. Students with mobility impairments will find it helpful to be given copies of all the visual material, annotated where appropriate. This will help them reflect on the visual elements of the delivery after the lecture.

'Although it is generally possible to photocopy lecturers' notes, I have come across situations where lecturers use slides, and there tends to be insufficient time for me to complete taking notes, or to keep up with what the lecturer is saying.'

4.3 Tutorials

Tutorials are used to stimulate discussion, work through examples and address issues in small informal groups. Students with mobility impairments can be disadvantaged in this environment and may not be able to contribute fully. Issues that may arise are the accessibility of the tutorial room, the size of the room (wheelchairs require more space) and the student contribution (if mobility impairment affects speech). Students with limited manual dexterity may require the worked copies of any examples used in the tutorials. All students will benefit from being given the topic of the tutorial in advance. Many tutorials in geography, earth and environmental sciences focus on the key skills elements of the curriculum. The delivery of this material in a student-led tutorial setting can be beneficial to all students.

Andrew hasn't always had positive experiences in communicating and relating to other students. He feels that this has affected his work as he feels that he has missed out on discussing work with other students, and his marks would have been better if he had been able to do this more.

4.4 Group work

Students should be encouraged by staff to engage with and work collaboratively with students with disabilities. Field mapping is an example of a GEES subject-based activity where group work is particularly effective. Students with mobility impairments benefit directly from the assistance of other students, and the group as a whole becomes more cohesive through the consideration of the needs of their peers.

4.5 Practical classes

'There might be a very few experiments that some physically disabled students will not be able to do but that does not make them non scientists. Indeed, other non disabled students might not have had the opportunity to complete all the experiments in a series either.'

(Jones & Hopkins in Powell, 2003, p.105)

All practical work should integrate with other aspects of the module/course delivery. It is important to appreciate that the learning outcomes can be achieved using a variety of techniques, all of which may be equally valid. There is a tendency to rely on the same, time-honoured techniques. Academic and technical staff development may be necessary to take advantage of new techniques and methodologies. Staff should discuss with the student with a

mobility impairment how to achieve the learning outcomes of the practical. This may involve using a different practical technique, changing the nature of the material or the venue of the practical. Students who use wheelchairs need to be provided with an adjustable bench space within the main teaching laboratory.

'In labs and practicals I find simple procedures quite difficult and this worries me because it can be dangerous. One experience that has stayed with me was a first year practical where I was working with another student who finished early and then left. The experiment hadn't worked and I wanted to repeat it but I couldn't do it on my own and I got a low mark.'

Practical techniques frequently used in geography, earth and environmental science subject areas that may present a barrier to learning for students with a mobility impairment are: optical microscopy, cartography and Geographic Information Systems (GIS), identification of specimens and surveying.

Practicals using chemicals or machinery: Practical using chemicals (for example, calculation of heavy metal concentration in soils) and machinery (for example, use of compression rigs in engineering geology) are potentially hazardous and therefore health and safety issues must be paramount <<http://www.hsl.gov.uk>>. In general, people with disabilities are safer as they are more aware of their limitations and consider fully the activity before attempting it (Powell 2003). Research has shown that people with disabilities do not pose a greater hazard than other people in a laboratory (Stern *et al.* 1987). For each experiment, a risk assessment should be carried out on an individual basis for students with mobility impairments.

Requirements of the Disability Rights Commission Code of Practice for providers of post-16 education and related services

6.13

The Disability Discrimination Act does not override health and safety legislation. There might be instances when, although an adjustment could be made, it would not be reasonable as it would endanger the health and safety either of the disabled person or of other people.

Where learning outcomes are not directly related to acquisition of the practical technique, the activity can be shared either within a group or between pairs of students. This procedure is equally valid and useful for both disabled and non-disabled students.

'Some difficulties have been experienced in more accurate work that needs a steady hand, also in using bulb pipette fillers, as I am unable to operate the buttons. There are, however, often sliding fillers that I have used instead (but not always).'

Optical microscopy: the use of a microscope can be replaced with other experiences if the learning outcomes of the session can still be achieved. For students with poor manual co-ordination, images from the microscope can be projected onto a screen. This facility is now common in most laboratories and helps all students make sense of the images seen through a microscope. Virtual microscopes have been developed (TRIADS Project, The Open University virtual microscope <<http://met.open.ac.uk/vms/vms.html#top1>>) and have been used with particular success for assessment. Such a system may be appropriate for a student who has restricted co-ordination but is able to operate a keyboard.

Cartography and GIS: constructing maps and manipulating spatial data can be achieved with online (computer-based or web-based) mapping services. Using these packages as opposed to relying on drafting skills, the acquisition of which can represent a barrier for students with limited manual dexterity, benefits all students. The maps produced are of professional quality and are an accurate representation of the data. Maps can be downloaded as jpeg files from the Ordnance Survey site <www.ordnancesurvey.co.uk/oswebsite/getamap> and annotated using drawing packages. Edited cartographic data, for example, river drainage patterns, can be constructed using Digimap <www.edina.ac.uk/digimap>. Elevation profiles can be plotted using a number of drawing packages, for example, ERDAS Imagine. Satellite images of the UK can be downloaded and annotated from Landmap <www.landmap.ac.uk>.

Identification of specimens: many practicals in geography, earth and environmental sciences subject areas are specimen-based. Although the majority of the activity is visual, to maximise the learning experience, students should handle the specimens. By working in pairs this experience can be shared. Manipulative skills are therefore not necessary for every member of the practical group.

Surveying: many institutions use practical class time to practise surveying techniques around the University campus. Most surveying is carried out using levels or total stations. For this activity, students always work in groups, and students with mobility impairments can still play an active part in this group work. Although the weight of the instruments may be prohibitive in mounting the level or setting up a total station, students with mobility impairments may be able to look through the viewfinder and record the data. A student with a physical disability may also be able to hold the staff or prism pole.

4.6 Fieldwork

'Fieldwork and expeditions often conjure images of strong, athletic, young white men climbing mountains, scrambling over glacial moraine or wading through torrents of rushing water. In reality the diversity of people who undertake fieldwork are as varied as the research themes they are following. It is the diversity of thought and individuals that make up a research group, who add value through alternative approaches and creative solutions.'

(RGS Inclusive Fieldwork and Expedition Practice workshop,
November 2002)

For a more detailed account of inclusion in fieldwork, see 'Support for Students with Mobility Impairments Undertaking Fieldwork and Related Activities', (Gardiner & Anwar, 2001) at <www2.glos.ac.uk/gdn/disabil/mobility/toc.htm>.

Fieldwork is an important element of the curriculum in geography, earth and environmental sciences. It is commonly perceived as the main barrier to the development of a fully inclusive student experience in these subject areas, particularly for students with mobility impairments. The reasons for this perception are the health and safety aspects of fieldwork, the cost implications of transport, additional staff and specialised equipment, and the stereotyped view of students in these disciplines. Geology is a particularly extreme example of this stereotyping, with the typical image being of strong athletic men working in rugged and remote terrain. Whatever the perception, since the DDA Part 4, all students are entitled to equal educational opportunities and this includes fieldwork. Therefore, institutions have a legal requirement to assess their fieldwork programmes for barriers to students with mobility impairments.

The primary consideration of academic and technical staff involved in fieldwork should be the learning outcomes of the fieldwork in relation to the programme or course aims and how these outcomes can be achieved. A critical analysis of the learning outcomes will enable all students to benefit from the fieldwork. It will also show how mobility impaired students may deal with the field sites. If this is untenable, the analysis will indicate the type of site that would be inclusive.

'Inclusive field trip design will envisage a variety of potential participants and accommodate as many varied needs as possible without compromising the objectives.'

(University of Strathclyde Teachability Project, 2002, p.38)

It may be that by using a few exposures close to car parks, the same outcomes can be achieved as walking between sites on uneven terrain. As with any aspect of the curriculum that has health and safety issues, an individual risk assessment should be carried out on each locality.

Our first year physical geography modules have about 60 students on them annually. The dilemma of satisfying the interests and needs of all our students has been addressed in that rather than taking all the students on a single field trip to a single destination, we decided to offer two parallel trips and students would choose which trip they went on. Although we do not emphasise the fact too strongly, one of the trips involved many short stops, mainly at roadside and urban locations in and around the Mendips, looking at geology, landforms and Quaternary history and is suitable for students with a wide range of disabilities. At the same time, another trip investigates exactly the same topics but in the Brecon Beacons, which involves more walking over rough terrain and so is less suitable for students with mobility problems but satisfies the 'rugged outdoor' image that some of our students have about geography. By offering two parallel trips that students can self select, we have found that all students can access and experience essentially the same academic diet in settings that foster their geographical interest.

Sarah is a second year student studying geography and environmental science. Her condition mainly affects mobility but she has a range of other symptoms that sometimes affect her studies. In her first year, Sarah studied in two academic departments. In one, the key support came from a lab technician with responsibility for arranging practical details on fieldwork. She made sure that Sarah had low level projects that did not involve any strenuous walking. In the other department, awareness was more patchy and she needed to take more responsibility to ensure that the fieldwork was manageable for her condition. She cannot remember filling in a health and safety form before starting fieldwork, which might have provided an extra opportunity to explain about her support needs.

A significant amount of planning is required before going into the field. It is important to discuss with all students the field activities as a whole. The field leader and student with mobility impairments then need to work together to establish precisely how to manage accessing the field locations. This discussion is vital and students must be assured that information will be kept in strictest confidence. It is important that field leaders do not make assumptions regarding the physical limitations likely to be encountered,

'...remember the expert on an individual's disability is always the person who has that disability'.

(Macdonald, 2002).

As stated in the first guide, 'Support for Students with Mobility Impairments Undertaking Fieldwork and Related Activities', (Gardiner & Anwar, 2001), 'inclusion really does mean inclusion'. A student with mobility impairments should be able to share all the experiences available to the other students including the social life and domestic arrangements (for example eating together) of a residential trip. Five inclusive fieldwork strategies were outlined in the first guide. These are summarised below.

- I. **Facilitate the activity so that the student can participate in it.** This may mean seeking an alternative route, hiring an off-road wheelchair (organisations that may be able to help with specialist equipment are the Calvert Trust <www.calvert-trust.org.uk/> and Ability UK <www.ability-uk.org/abilityuk.html>) or providing notes on a particular location.
- II. **Facilitate the activity so that the student can participate in it but at a different location.** In this case, the whole cohort should use the new location. In redesigning their fieldwork programme to make it more inclusive, staff at Stanford University, USA, found that the learning experience was better for all students (Cooke *et al.* 1997).
- III. **Substitute an alternative activity with the same learning outcome(s).** In some cases it is the activity rather than the location which is important. In this situation it may be possible to bring the activity to the students. For example, if measuring clast size in a river channel, the material could be taken to a more accessible location to be analysed.
- IV. **Provide additional time for the activity.** In some cases more time will be required. This will require careful planning to ensure that all members of the group are engaged during the activity.
- V. **Do virtual fieldwork.** Virtual environments have been shown to help all students become active rather than passive learners by appealing to their multi-sensory learning ability with interactive media (Freundshcuh & Hellevik, 1999). The virtual environment also allows prior and subsequent examination of the field site and can be used for pre-fieldwork preparation and post-fieldwork reflection and reinforcement. For students with mobility impairments virtual field trips can be used to provide a method for evaluating, with the student, their ability to undertake the fieldwork, and adapting the work in

response to student needs. For examples see the JISC-funded Virtual Field Course Project <www.geog.le.ac.uk/vfc/>.

4.7 Work Placements

In the subject area geography, earth and environmental sciences, work placements are likely to be either a sandwich year (a year working in an appropriate industry) or a placement associated with a work-based learning module. In most work-based learning modules, the time spent at work is three to four weeks. Both types of placement involve a learning agreement. This can be used to ensure that students with mobility impairments are able to take full advantage of the professional training.

All students require support before, during and after the placement. The placement must be in a firm or organisation that has an Equal Opportunities policy. Whilst on the placement, providing the student has a contract with the provider and has disclosed their disability, the student is protected under the Disability Discrimination Act 1995 Part II Employment. The Department for Education and Skills has published a guide for work placement provision for disabled students <www.lifelonglearning.co.uk/placements/index.htm>.

For students with mobility impairments, the main issues are likely to be transport to and from the placement, access within the workplace and tasks involving manipulation (for example, operating a microscope or using laboratory equipment). In arranging the work placement, the overriding factor should be the student's aspirations and the academic appropriateness of the placement. Work placement tutors should avoid stereotyping the student's disability and arranging an academically unsuitable placement because it accommodates the disability.

A successful placement will be the result of informed dialogue between the student, the placement tutor and the employer. This dialogue will only be effective if the student discloses his or her disability and there are strong links between the university and the placement provider.

5 Assessment

5.1 Introduction

Making adjustments to assessment, or provision for alternative arrangements, must not involve the compromising of standards. These should apply to all students. What is key is that assessment strategies should aim to minimise the impact of disability on a student's performance at assessment. It is important that students with disabilities are not disadvantaged in assessment but nor should any alternative arrangements give them an advantage over other students. Many of the same issues that are relevant to teaching and learning methods will also apply to assessment. Again, it is important to ascertain the nature of the student's physical impairment, which may be seen or unseen.

Recommendations of the QAA Code of Practice Section 3: Students with Disabilities

Precept 13

Assessment and examination policies, practices and procedures should provide disabled students with the same opportunity as their peers to demonstrate the achievement of learning outcomes.

Institutions should consider implementing procedures for agreeing alternative assessment and examination arrangements when necessary that:

- are widely publicised and easy for students to follow;
- operate with minimum delay;
- allow flexibility in the conduct of examinations;
- protect the rigour and comparability of the assessment;
- are applied consistently across the institution;
- are not dependent on students' individual funding arrangements.

The Code of Practice provides examples of adjustments that might be made, such as: flexibility in balance between course work and examination, demonstration of achievement in alternative ways, additional time allowances, rest breaks and re-scheduling of examinations. Consideration should be given

to the use of computers, amanuenses, readers, scribes and other support in examinations. Other adjustments suggested are the availability of examinations or the presentation of assessed work in alternative formats and the provision of additional rooms and invigilators for those using alternative arrangements.

'..in written exams I need the use of a scribe which is very difficult as I lose my train of thought. Other exams I write myself and if they are multiple choice I don't have too many problems, but short answer tests tend to be more difficult. In coursework, it takes me a lot longer to write stuff up. I have also had problems in getting deadline extensions.'

5.2 Making assessment accessible

The emphasis of this section is on accessible and inclusive assessment that may, or may not, also involve making special arrangements and adjustments. When considering assessment for students with disabilities, it is likely that first thoughts would be to consider the need to make special arrangements or adjustments. This could involve a consideration of the physical environment in which assessment is to take place, provision of extended time allowances and rest breaks, the use of an amanuensis or assistive technology, or the help of a personal assistant. It might also involve providing an alternative assessment, for example, instead of writing a dissertation, the student may produce a CD ROM. There will always be the need to make special arrangements, but when considering making adjustments a more fundamental approach would be to consider the accessibility of assessment for all students. It is a principle of good course design that there should be a match between learning outcomes and assessment tasks. Reviewing the ways in which the achievement of learning outcomes are assessed in modules and programmes may provide opportunity to consider alternative assessments that could benefit all students.

A word of warning! There is now an extensive range of practical resource material on designing assessment for students with disabilities, much of it available online. The terminology, though, can be confusing. A number of the guides will refer to 'alternative assessment' in the context of making special arrangements or providing an alternative, or different, method of assessment. However, 'alternative assessment' can also mean thinking about doing it differently altogether, i.e. choosing different methods of assessment to test the learning outcomes that are accessible to all students.

The DEMOS project's module on assessment is a comprehensive staff development resource that covers a wide range of assessment issues, provides practical guidance on assessment design and links to further resource support <<http://jarmin.com/demos/course/assessment/index.html>>.

5.3 What should be the key considerations in assessing students with disabilities?

'Alternative assessments should accommodate the student's functional differences that arise as a consequence of their disability, their methods of communication, learning styles and physical considerations. Using such approaches the students will be better able to demonstrate their ability.'

(SWANDS, 2002, p.86)

The SWANDS guide identifies three aspects of establishing an alternative assessment strategy:

- the range of assessment methods currently applied within the course or module;
- the viability of alternatives for assessing the learning outcomes of the course;
- the impact of the disability on the particular individual.

Practical examples and checklists for making adjustments and alternative provision are given in the SWANDS section on assessment.

The SWANDS summary (p.95) of the range of assessment methods identified in the QAA Subject Benchmark is given as a useful resource from which to identify alternative methods for assessing learning outcomes. An example is given of a student with cerebral palsy who would have experienced difficulty in writing an 8,000 word dissertation. The alternative method was for the student to produce a multi-media CD ROM as part of an interactive website design.

Different types of mobility impairment may call for different assessment strategies, and even within the same impairment, students' needs will vary. Alternative assessment strategies required may also vary from one type of assessment to another. For example, a student with cerebral palsy might manage well on a multiple choice test with additional time but will experience greater difficulty and need more additional time in an essay type examination because of the amount of writing demanded by the task.

The Australian National University (ANU) guide 'Alternative Assessment for Students with Disabilities', <www.anu.edu.au/disabilities/altass.html>, is helpful in describing alternative assessment strategies and how they can be used, for example:

- use of personnel such as readers, scribes and personal assistants;
- oral examinations as an alternative to written examinations;
- use of personal computers in examinations;

- time-related changes (additional time, rest breaks).

Related alternative assessment strategies are provided for types of disability such as chronic fatigue syndrome, chronic pain, overuse injury and physical disability. In each case, the functional difficulties are described and alternatives suggested.

The Sheffield Hallam University's guide to inclusive practice in accessible assessment <www.shu.ac.uk/services/liti/accessibleassessments/> is a particularly useful practical resource and the following section draws on its guidance on assessment design for students with physical disabilities. For forms of assessment such as essays, report writing or assessment by portfolio, students who experience severe pain, tiredness and weakness may need longer to complete assignments. For oral presentations, vivas and group work, issues of physical access for students need to be considered. Tutors need to ensure that students can be seen by peers and others making presentations. If there are related communication difficulties, the tutor will need to consider how the way the group communicates is accessible and inclusive.

A student with mobility impairments that are the result of a series of strokes said that he had avoided public talking as his speech is not very good, but felt that with support and coaching he could have managed the presentations. He got an A in his GCSE English for oral presentations; what he needed help with was in delivery, in staying calm and in managing his speech.

'I've been OK on fieldtrips. We went to Barcelona. It hurt sometimes when we were recording the information out there, but because of the good weather and nice sun, it kept my wrists warm and it was OK. It hurt more when I came back and had to write it all up. But I did it. It hurt, but I did it.'

If there is a substantial written component to group work, students may need an extended deadline. Where assessment involves poster presentations, tutors will need to ascertain whether students will have problems with manual dexterity in making the poster and whether alternatives should be considered.

Physical access to examination accommodation needs taking into account in terms of both access to buildings and also room layout. Suitability of tables and width of gangways for students who use a wheelchair needs to be checked. Wheelchair users may need early access to the examination room to settle themselves. Students who experience severe pain, weakness or tiredness after a prolonged amount of time writing or sitting may need additional time, a scribe

or rest breaks. Arrangements may also need to be made to accommodate a student's personal assistant and students' personal care requirements such as toileting. Students may need to use a computer and assistive software. Where special arrangements are to be made, separate accommodation may need to be provided.

Students with mobility impairments may use alternatives to the mouse such as shortcut keys, a joystick or rollerball. Layout of material needs to be clear and consistent. It helps to make all students aware of shortcut keys. Students may access online material using assistive software (for example, voice input software). The software needs to be compatible with the online environment and students will need to know who to contact if they experience difficulties. Assistive software might mean that students need additional time to complete online assessment or to make seminar presentations (for example overheads or Powerpoint slides). Students need to know the criteria against which presentations are going to be marked if constructing image-rich slides involving significant manual dexterity is going to cause any difficulty (e.g. cutting, pasting, manipulating text boxes and diagrams).

For quizzes and multiple choice assessments, the format and layout need to be accessible to the student. Multiple choice questions marked by an optical mark reader that need to be completed in a prescribed way may be problematic for students with physical impairments, and this would need to be discussed with students prior to the test. All computer-assessed assignments should be manually checked by the tutor. This is good practice for all forms of computer-based assessment.

'Feedback on progress is important to any learner...educators need to use initiative in finding ways of making feedback on all aspects of learning accessible and useable. Students need not only to be able to access feedback as a regular part of their engagement with the curriculum, but also enabled to make the most effective use of that feedback.'

(Powell, 2003, pp.10-11)

Strategies for adapting assessment and for provision of alternative assessments also apply to formative as well as summative assessment. The Sheffield Hallam University's guide to inclusive practice in accessible assessments <www.shu.ac.uk/services/lti/accessibleassessments/> also provides practical examples of what staff might need to consider in giving feedback to students with disabilities.

Arrangements made for the assessment of students with disabilities should be focused on minimising the impact of the disability on the student's performance in assessment. Making special arrangements or adjustments or using alternative methods of assessment will help students to best demonstrate

their ability. Having done that, there is then no need for special arrangements or adjustments in the marking and moderation of the work of students with disabilities. Indeed, to do so would affect the parity of assessment for all students.

6 Resources

Students with disabilities are entitled to apply for Disabled Students' Allowances (DSA). The rate will vary according to their particular needs. Students with mobility impairments are most likely to receive a higher rate given the nature of their needs. Students should apply for the DSA via the welfare or specialist disability advisers. Where additional equipment or support is required to meet learning needs associated with fieldwork, application should be made to the Local Education Authority. It may also be the case that the university has also set aside particular funds to support students; then separate application needs to be made.

In 2000-01, the Higher Education Funding Council for England (HEFCE) created a new stream of funding to widen access to higher education for students with disabilities. Higher education institutions receive specific funds, the disability premiums, from HEFCE to meet the welfare needs of students with disabilities.

There are, however, issues to be considered by staff and local management in that budget planning should specify the defined fund stream. Any refurbishment by Estates must take account of accessibility issues and future purchase of equipment needs to take account of ergonomic requirements.

7

Conclusions

This guide provides good practice and advice as well as raising some of the critical issues for meeting the needs of mobility impaired students. Although it does not give ready made answers or solutions, the intention is provide an opportunity for lecturers, technicians and support staff to re-examine their practice and focus on how the learning outcomes can be achieved. This may mean abandoning cherished and nostalgic material and replacing it with a truly inclusive curriculum. We are not suggesting that this process is easy but by taking this journey, the end result will be an improvement for all.

8

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Quality Assurance Agency (1999) *Code of Practice for the assurance of academic quality and standards in higher education: (Section 3): Students with disabilities* at

<www.qaa.ac.uk/academicinfrastructure/codeOfPractice/section3/default.asp>.

Teachability (2000) *Creating an accessible curriculum for students with disabilities* (Scottish Higher Education Funding Council, University of Strathclyde).

8.1 Websites

Ability UK <www.ability-uk.org>.

Access to work <www.jobcentreplus.gov.uk/>.

Australian National University Alternative Assessment for Students with Disabilities <www.anu.edu.au/disabilities/altass.html>.

The **Calvert Trust** specialises in outdoor activities for disabled people <www.calvert-trust.org.uk/>.

Demos online Materials for Staff Disability Awareness <www.jarmin.com/demos>.

Department for Education and Skills <www.dfes.gov.uk>.

Department for Education and Skills guide for work placement provision for disabled students <www.lifelonglearning.co.uk/placements/index.htm>.

Digimap <www.edina.ac.uk/digimap/>.

Health and Safety Laboratory <www.hsl.gov.uk>.

Landmap <www.landmap.ac.uk>.

Ordnance Survey <www.ordnancesurvey.co.uk/oswebsite/getamap>.

Positive Equality <www.positive-equality.co.uk>.

Sheffield Hallam University Accessible Assessments - Staff Guide to Inclusive Practice <www.shu.ac.uk/services/liti/accessibleassessments/>.

TechDis <www.techdis.ac.uk>.

TRIADS Project: The Open University virtual microscope <<http://met.open.ac.uk/vms/vms.html#top1>>.

Virtual Field Course Project (JISC-funded) <www.geog.le.ac.uk/vfc/>.

NB All web addresses in this Guide last accessed 25.08.05.