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## **Providing Learning Support for Students with Hidden Disabilities and Dyslexia Undertaking Fieldwork and Related Activities**

Brian Chalkley and Judith Waterfield

University of Plymouth

Series edited by Phil Gravestock and Mick Healey  
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## **About the Authors**

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## Editors' Preface

Awareness of the need to develop inclusive practices, which provide equal opportunities for disabled students in various parts of their courses, is beginning to spread through Higher Education Institutions (HEIs) in the UK. This has been stimulated by the publication of the Quality Assurance Agency (QAA) (2000) *Code of Practice – Students with Disabilities* and the extension of the Disability Discrimination Act (1995) to education through the Special Education Needs and Disability Act (2001).

This series of guides to providing support to disabled students undertaking fieldwork and related activities is the main output from a project funded by the Higher Education Funding Council for England's (HEFCE) *Improving Provision for Disabled Students Funding Programme*.

The advantage of focusing on fieldwork is that many of the issues faced by disabled students in higher education are magnified in this form of teaching and learning. If the barriers to full participation by everyone can be reduced or overcome it is likely that our awareness of the obstacles to their full participation in other learning activities will be heightened and the difficulties of overcoming the barriers will be lessened.

The project has been 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. This project was undertaken by a group of geographers, earth and environmental scientists working alongside disability advisers and educational developers.

There are six guides in the set. The first '*Issues in Providing Learning Support for Disabled Students Undertaking Fieldwork and Related Activities*' provides an overview to the series, including the role of fieldwork models of disability, barriers and strategies and the legislative and quality assurance frameworks. It also discusses ways of developing an inclusive fieldwork curriculum and the role on institutional disability advisers. The text is peppered with case studies and boxed examples of good practices. Each of the remaining guides addresses the application of these general issues along with the particular circumstances involved in providing support to particular groups of disabled students:

- Providing Learning Support for Students with Mobility Impairments Undertaking Fieldwork and Related Activities
- Providing Learning Support for Blind or Visually Impaired Students Undertaking Fieldwork and Related Activities
- Providing Learning Support for d/Deaf or Hearing Impaired Students Undertaking Fieldwork and Related Activities
- Providing Learning Support for Students with Mental Health Difficulties Undertaking Fieldwork and Related Activities
- Providing Learning Support for Students with Hidden Disabilities and Dyslexia Undertaking Fieldwork and Related Activities

These categories are ones commonly used in providing information, support and analysis of disabilities. Furthermore, many of the obstacles that disabled students face in undertaking fieldwork, and the appropriate methods of overcoming or minimising them, are specific to the kind of disability. Despite using medical categories for describing disabilities we are committed to emphasising a social model to exploring disability, which emphasises 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 individuals (blaming the victim), to society and the strategies and policies that higher education institutions and their constituent departments develop and enact. The emphasis of this series of guides is on identifying the barriers that disabled students face to participating fully in fieldwork and the ways in which institutions, departments and tutors taking field classes can help to reduce or overcome them.

The net outcome of the quality assurance and legislative changes is that HEIs will 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.

Phil Gravestock and Mick Healey  
University of Gloucestershire  
November 2001

## References

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.

*All World Wide Web links quoted in this guide were checked in November 2001.*

# 1 Introduction and Context

## 1.1 Students with disabilities: new expectations and priorities

As participation in higher education (HE) increases for groups which were previously under-represented, so expectations are changing about the scale and quality of learning support which should be available for students with disabilities. If such students are to receive improved learning opportunities, it is important that an awareness of these changes is not confined to disability specialists. Discipline-based academic staff and others directly responsible for student learning also need to understand the new priority being given to disability issues. Academics, support staff and others working in Higher Education Institutions (HEIs) need to consider what measures should be taken to further improve the quality of learning opportunities for students with disabilities.

The national factors driving the main developments taking place in this area include changes in legislation, in quality assurance procedures and in funding. The government is currently introducing legislation on disability rights in higher education; the Quality Assurance Agency for Higher Education (QAA) has recently published a *Code of Practice on Students with Disabilities* (QAA, 2000c) and there are new funding provisions both for institutions and for students. Disability issues are therefore clearly going to permeate higher education more widely and more deeply. Amongst other implications, academic staff will need to address in a more focussed and creative way, curriculum, teaching, learning and assessment issues as they affect students with disabilities. This will entail maintaining a clear focus on academic standards and rigour while thinking imaginatively about how students with disabilities can be supported and enabled to demonstrate their achievements. To some academic staff this will be a new agenda. To most it will be require looking again, and perhaps with a new light, at issues which are now featuring much more prominently on the HE stage.

This volume on dyslexia and hidden disabilities is one of a series which is designed to assist in this task those staff who are responsible for the organisation and delivery of field teaching. Fieldwork is one of the principal modes of teaching in several higher education disciplines, and especially in geography and in the earth and environmental sciences. There are nearly 6,000 HE students in the UK with dyslexia and the numbers are continuing to rise. This is the largest single disability category in higher education. The other groups covered in this volume include those with asthma, diabetes, epilepsy, musculoskeletal disorders, lung and kidney problems, heart conditions and chronic fatigue syndrome (ME). Together these other 'hidden' disabilities affect nearly a further 9,000 HE students.

## 1.2 Why fieldwork support matters

Fieldwork, broadly defined, can be described as a structural and relevant learning experience which takes place outside the classroom. For certain kinds of students with disabilities, this form of learning can pose particular challenges different from (and often in addition to) those which occur in conventional, on-campus situations. For students with dyslexia, for example, there can be problems in taking good notes while working in the field. For students with 'hidden' medical conditions, such as

asthma or epilepsy, fieldwork can pose health concerns. Obviously, the severity of the problems depends very much on the individual's circumstances and on the nature and location of the field tasks being undertaken. However, the very fact that such concerns exist raises the question, particularly for the most seriously affected students, of whether fieldwork is really necessary. And certainly there will be cases where the answer has to be 'No' for health or safety reasons. Nonetheless, there is a strong case for fieldwork, not only on the grounds of offering parity of experience but also because of its substantial academic merits. Computer-based simulations ('virtual' fieldwork) cannot provide a fully satisfactory alternative.

In disciplines such as geography, earth and environmental sciences, fieldwork provides a particularly important learning opportunity in that it involves studying landscapes, earth processes and environments at first hand. Many undergraduates find this form of experiential study highly effective because it promotes 'deep learning', that is learning which lasts and which becomes part of the student's working knowledge. Fieldwork can also be used to develop skills in research methods, data collection and the use of specialist equipment. It develops students' observational abilities in landscape and environmental interpretation, and it promotes the development of a range of key skills, particularly in team-working. For these reasons many courses in geography, earth and environmental sciences include, in addition to local field days, either one or two residential fieldtrips, typically of a week's duration. There are, of course, financial pressures tending to curtail fieldwork but the importance attached to it in the relevant QAA benchmarking statements (QAA, 2000a, b) means that it will continue to occupy a significant place in the curriculum and in the assessment system. It is therefore imperative that, in so far as is practicable, measures are in place to ensure equal opportunities for students with disabilities and the provision of forms of support tailored to meet their field-course needs.

For departments and institutions, these matters have recently been given added urgency by the publication of the QAA *Code of Practice on Students with Disabilities* (QAA, 2000c). Precept 11 of the Code focuses specifically on fieldwork and study overseas. It states that 'Institutions should ensure that, wherever possible, disabled students have access to academic and vocational placements including fieldtrips and study abroad'. As a result, when institutions and departments are reviewed by the QAA, they could be asked to demonstrate that appropriate fieldwork provision and support is being made available. The Precept's phrase 'wherever possible' is, of course, open to interpretation but it is none the less the QAA's clear intention to open up more and better fieldwork opportunities for students with disabilities. This in turn will mean that in future more detailed consideration will need to be given to the question of how such students are to be supported and assisted.

### **1.3 The purpose and organisation of this guide**

As indicated above, this guide focuses on meeting the fieldcourse needs of students with dyslexia or other 'hidden' disabilities. Its main aim is to identify the issues fieldwork may pose for such students and to outline ways in which these difficulties might be overcome or minimised. It recognises that every student is unique and that the guidance offered here takes the form of general statements of good practice. It is not, therefore, a book of rigid rules and does not seek to override the judgement of individual staff dealing with individual students.

The guide is written with two main kinds of readers in mind. The first is, of course, academics involved in the design and delivery of fieldwork. Although it is targeted at geographers and colleagues in cognate disciplines such as earth and environmental science, academics in other field disciplines such as ecology and architecture might also find the ideas of interest. The second intended audience is HE specialists in disabilities. Part of their task is to assess students' needs and to advise both students and staff. Few disability specialists will have extensive fieldwork experience and so this guide will offer insights into the kind of work which is undertaken during fieldcourses, the problems which can arise and the solutions which may be appropriate.

The remainder of this volume falls into six short chapters. The first provides a brief review of the nature of dyslexia and other hidden disabilities so as to identify the kinds of concerns and obstacles they may cause. The second focuses on meeting the fieldwork needs of students with dyslexia. The third covers the same agenda for a variety of other hidden disabilities; given the range covered each one is dealt with only in outline. The volume closes with some brief student cameos and with some wider implications and proposals.

## 2 Dyslexia and Other Hidden Disabilities

### 2.1 What is dyslexia?

Although the general public tend to think of dyslexia as simply 'word blindness', it is in fact a broad-based syndrome which can have both positive and negative features. It varies in degree from person to person and falls into two main categories, namely *developmental* and *acquired*.

Developmental dyslexia is neurological in origin and is unrelated to both intelligence levels and educational and social background. Problems may be linked to the processing of language-based information, short-term memory, co-ordination and sequencing which can affect reading, spelling, comprehension, organisation of time and tasks, numeracy, oral skills and the retention of material presented in both visual and auditory modes.

Acquired dyslexia is 'a condition characterised by a significant loss of literacy skills ... as a result of some neurological trauma (such as a stroke or head injury, illness or brain disease)' (Singleton, 1999).

The characteristics of dyslexia are made more complex by the fact that they can vary both in degree and from day to day according to stress levels and task demands. Some individuals with dyslexia show particular talents in the fields of art, science, architecture and engineering, which require high-level creative and visual skills. West (1997) outlines the following positive aspects of dyslexia which when utilised in the learning process can benefit the student and their peers in group work:

- good powers of visualisation
- creative thinking skills
- visuo-spatial skills
- a holistic rather than analytical approach
- good applied and problem-solving skills.

It is therefore imperative to harness the learning styles of individuals to maximise their strengths and compensate for weaker areas. From a teaching perspective this can constitute good practice for all students.

Other specific learning difficulties such as attention deficit disorder and dyspraxia can have similarities to dyslexia and may co-exist in the same individual. High levels of distractibility and a preference for single-task activities are characteristics which may be found in all three specific difficulties.

In addition, a dyspraxic student may experience problems with:

- judging heights and distances
- co-ordination, balance and self-positioning (therefore labelled 'clumsy')
- practical work
- handwriting.

## **2.2 Issues for students with dyslexia embarking on traditional fieldwork activities**

When undertaking fieldwork, students with dyslexia may experience problems with tasks such as:

- taking accurate notes in non-classroom environments
- multi-sensory tasking – listening, observing, recording and reading
- speed of handwriting and legibility
- organisation of time
- orientation, reading maps
- slow reading speed for accurate comprehension
- visual perceptual difficulties with poorly photocopied material, particularly black print on white background
- remembering fieldtrip arrangements
- group work
- recording data and making mathematical calculations.

The number of the above difficulties experienced will vary between individual students depending on the severity and nature of their dyslexia. Some might experience only one or two symptoms: others might experience several.

## **2.3 What are the other 'hidden' disabilities**

Some people have a medical condition which is unseen and which they normally manage by themselves, without seeking assistance from those around them. They often do not consider themselves to be disabled or as having any particular needs. However, certain situations, including some found on fieldwork, may cause problems. Examples of such medical conditions include asthma, diabetes, epilepsy, musculoskeletal disorders, lung and kidney complaints, heart problems and chronic fatigue syndrome (ME). (Mental health problems may also be exacerbated during fieldwork as a result of unfamiliar situations, social anxieties and the loss of normally available support agencies – see Birnie & Grant, 2001).

The above list is by no means exhaustive but it does serve to illustrate the wide spectrum of disabilities and medical conditions of which staff need to be mindful. Of course, academics are not expected to be experts in medicine. They should, however, have basic first-aid training and a general awareness of the possible implications of fieldwork activities for the most common medical conditions. They should also know where to obtain expert advice.

## **2.4 Fieldwork barriers facing these students**

The category of other hidden disabilities is so wide and varied that it is not possible to identify a shared set of problems which such students might all encounter as a result of fieldwork. The items listed below therefore do no more than illustrate the kinds of circumstances and problems which could inflame an existing hidden condition. The

detailed symptoms and some appropriate courses of action for each individual condition are set out in the tables in Section 4. The very general list below, however, serves as a reminder of the kinds of circumstances sometimes encountered on fieldtrips which might (albeit rarely) carry medical implications:

- climatic extremes
- heavy exercise
- allergen, e.g. pollen
- lack of food
- difficult terrain
- long working hours
- new social contexts
- shared accommodation
- lack of special dietary arrangements
- distance from expert medical care.

### 3 How to Support Students with Dyslexia

If students with dyslexia are to receive the support they need, it is important for staff to focus not only on the actual fieldwork itself but also on relevant activities before and afterwards. The pre-fieldwork phase is especially important in that this is the period of planning and preparation. It is at this time that students should be invited, if they wish, to alert staff to their dyslexia and to the kinds of assistance they would appreciate (though obviously disclosure must not be compulsory). It is at this stage that students and academic staff are most likely to liaise with and seek advice from colleagues specialising in disability support. The post-fieldwork stage is important both because of students completing assignments for assessment and because this is the period when students can reflect back on the trip and evaluate its successes and its problems.

In line with the need, therefore, for a comprehensive and longitudinal approach to student support, the tables which follow deal with all three phases (pre, during and post) and try to identify likely problems and possible solutions. Many of the ideas in the tables stem directly from interviews with students with dyslexia who have recently completed residential fieldwork. The six students who provided detailed interviews for this volume had all hugely enjoyed and benefited from their fieldwork but everyone identified some ways in which more attention to their dyslexia needs could have further enhanced their fieldwork learning experience. From research by Hall *et al.* (2001) we know that in geography, earth and environmental sciences over 70 per cent of academic staff have been involved in taking students with dyslexia on fieldwork. This is, therefore, not a small issue and it certainly merits our serious consideration. The Hall *et al.* survey uncovered several examples of existing good practice, some of which has informed the guidance given below in this volume. A key ambition for the future must be to disseminate and embed the good practice as widely as possible.

#### 3.1 Support before the fieldtrip

##### Possible solutions to difficulties that can occur before a fieldtrip

Difficulties	Solutions
1. Staff awareness of dyslexia	<ul style="list-style-type: none"> <li>• Staff development session on dyslexia</li> <li>• If disclosure is agreed, information exchange procedures need to be in place between fieldwork staff, support services and the relevant students</li> <li>• Assessment of need for fieldwork to be part of Disabled Student Allowance (DSA) assessment. (This can, for example, fund specialist equipment such as laptop or a non-medical helper)</li> <li>• Disability awareness training for all staff and students, (supports equal opportunities and breaks down misconceptions and myths)</li> </ul>

<p>2. Short term memory, information processing, sequencing problems:</p> <ul style="list-style-type: none"> <li>• Remembering arrangements (date, time place)</li> <li>• Organising time</li> <li>• Packing the appropriate equipment &amp; clothes, arranging money etc</li> </ul>	<ul style="list-style-type: none"> <li>• Travel arrangements must be transparent</li> <li>• Information is required in variety of formats – verbal, written, e-mail</li> <li>• Information reminders prior to departure</li> <li>• Purchase of Personal Organiser through DSA (see Appendix 1)</li> <li>• Study Skills support for time management, organisation and recall strategies through DSA</li> <li>• 'Buddy' system and peer support</li> </ul>
<p>3. Timing of preparatory reading</p>	<ul style="list-style-type: none"> <li>• Allow time for slower reading and processing</li> <li>• Give pre-reading titles early to allow for dyslexic students' difficulty with short-term library loans</li> <li>• Give out course handbooks well in advance</li> <li>• Supply written list of unfamiliar key subject words and place names</li> </ul>
<p>4. Design of written material for students</p>	<ul style="list-style-type: none"> <li>• Minimum 12 point font size</li> <li>• Use Arial or other sans serif font</li> <li>• Avoid too much underlining, capitals and italics</li> <li>• Use coloured paper</li> <li>• Avoid 'ghosting' or text overlaid on graphics</li> <li>• Use bullet points</li> <li>• Leave wide spaces</li> <li>• Left justify only</li> </ul>
<p>5. Note taking</p>	<p>Arrange study skill sessions on taking accurate notes in the field – arranged through DSA</p>

### 3.2 Support during the fieldtrip

#### Possible solutions to difficulties that can occur during a fieldtrip

Difficulties	Solutions
<p>1. Written language</p> <ul style="list-style-type: none"> <li>• Writing and spelling unfamiliar words – blocks thinking process</li> <li>• Exposing weakness in spelling to peers when undertaking group work</li> <li>• Writing at speed</li> <li>• No time for personal field observations and 'sense of place' when struggling to record information</li> <li>• Verbalising experience from field notes which are an incomplete record</li> <li>• Taking legible full notes in the field: therefore longer time required for writing up detailed field note-books afterwards</li> </ul>	<ul style="list-style-type: none"> <li>• Handouts</li> <li>• Key words and names on a sheet prior to visit</li> <li>• Need to negotiate on necessity of a field note book being kept in the field.</li> <li>• Negotiate specialisation of role (e.g. leadership or co-ordinating role) to maximise strengths and minimise weaknesses</li> <li>• Laptop computer for writing up notes</li> <li>• Use of dictaphone to capture the moment/place/experience</li> <li>• Amanuensis</li> <li>• Access to specialist software (Text-help or Inspiration on a laptop to assist speed of sorting, planning and proof reading) (see Appendix 1)</li> <li>• Work with peers in evening to share information and thinking</li> <li>• Electronic thesaurus for use at base to improve quality of field notes</li> <li>• Allow students time to improve notes</li> <li>• Use of 'Alpha Smart' for word processor (see Appendix 1)</li> </ul>
<p>2. Numerical data</p> <ul style="list-style-type: none"> <li>• Recording accurate data</li> <li>• Making sense of graphs (tracking difficulties)</li> <li>• Making accurate calculations</li> </ul>	<ul style="list-style-type: none"> <li>• Recording sheets/forms</li> <li>• Shared tasks with peers</li> <li>• Talking calculator (see Appendix 1)</li> <li>• Text to voice software such as Text-help on laptop</li> </ul>
<p>3. Multi-tasking</p> <ul style="list-style-type: none"> <li>• Listening, recording, observing and creatively and critically thinking causes overload, fatigue and anxiety and reduces performance</li> </ul>	<ul style="list-style-type: none"> <li>• Be clear about the principal tasks in hand</li> <li>• Paired/shared responsibilities</li> <li>• See bullets for 1 above</li> <li>• Reduce amount of information processing required</li> </ul>
<p>4. Listening to lectures</p> <ul style="list-style-type: none"> <li>• Speed of delivery</li> <li>• Difficulty retaining, processing and recording</li> </ul>	<ul style="list-style-type: none"> <li>• Alert guest lecturers, who may not be professional presenters, to the need for short delivery and sensible pace</li> <li>• See points 1 and 3 above</li> </ul>

<p>5. Distractability in the field</p> <ul style="list-style-type: none"> <li>• Background noise</li> <li>• Visual stimuli</li> <li>• Transport disturbance</li> <li>• Difficulties concentrating/listening when faced with the above</li> </ul>	<ul style="list-style-type: none"> <li>• Staff need to be cognisant of problem</li> <li>• Select quieter locations</li> <li>• Separate observation, listening and recording tasks</li> <li>• Make clear to students the relative significance and level of priority of the points made</li> <li>• De-briefing and feedback session in the evening</li> </ul>
<p>6. Visual perception</p>	<ul style="list-style-type: none"> <li>• Use of coloured paper for handouts and fieldwork note-books</li> <li>• Use blue marker on white board for seminar/lecture instead of black</li> <li>• Student wears coloured visor or coloured lenses</li> </ul>
<p>7. Group work/peer assessment</p> <ul style="list-style-type: none"> <li>• Reluctance to reveal weaker areas e.g. spelling, handwriting, inaccurate calculations</li> <li>• Not wanting to be treated differently</li> <li>• Verbal skills</li> <li>• Reading notes at speed</li> </ul>	<ul style="list-style-type: none"> <li>• Give students with dyslexia opportunity to show possible strengths in other areas e.g. holistic creative ideas, leadership, good visuo-spatial strengths, lateral thinking skills</li> <li>• Alternative assessment</li> </ul>

### 3.3 Support after the fieldtrip

#### Possible solutions to difficulties that can occur after a fieldtrip

Difficulties	Solutions
<p>1. Producing work commensurate with understanding in a brief time-scale</p>	<ul style="list-style-type: none"> <li>• Submission time allows for slower organisation, processing, drafting and writing speeds</li> <li>• Alternative assessment</li> </ul>
<p>2. Numerical data</p>	<ul style="list-style-type: none"> <li>• Meeting to address dyslexia issues (positive and negative) to enhance future fieldwork</li> </ul>

## **4 How to Support Students with Other Hidden Disabilities**

Whereas for students with certain kinds of disabilities many of the fieldwork support arrangements relate directly to academic matters, for students with other hidden disabilities the support arrangements are more often targeted at dealing with the medical condition itself. The principal aim is, of course, to enable the student to feel better but a consequence of this may be an enhanced capacity to take a full part in the fieldtrip and thereby cope with its academic demands more successfully.

In the dyslexia discussion earlier, the text was divided into three phases (pre, during and post-trip) but for the other hidden disabilities a different format is being used so as to avoid repeating similar messages about handling risks and remedies at each stage. Instead, the opening part of this chapter outlines some general problems which may need to be addressed (such as inappropriate accommodation) and the later section looks in more detail and in turn at a number of different hidden conditions such as asthma, diabetes and epilepsy. Throughout the chapter the emphasis is on identifying problems and listing some possible solutions. The advice offered is inevitably broad-brush and staff leading the fieldtrip will obviously need to be mindful both of their particular circumstances and the particular needs of individual students. All staff should have a basic first aid training and should certainly identify well in advance any students with particular medical difficulties and how these are to be dealt with. Academic staff are not, of course, medical experts but they should find out how to obtain expert medical help in the fieldwork area. Careful planning and forethought can be vital in preventing problems from turning into emergencies.

For students with serious conditions an early decision may be needed about whether they should participate in the fieldtrip at all or perhaps participate in only specified parts of it. The students' health and safety must always be the prime concern. In all these discussions, the students' views should be listened to and, in addition, where the issues are complex, it may be necessary to obtain specialist disability or medical advice. Such matters are best dealt with early. It may be possible at that stage to adjust the planned itinerary or to arrange alternative tasks for the student concerned which will satisfy the learning outcomes without exposing them to undue risk.

Staff will need to be particularly careful and cautious about the risks involved in any arrangement which might potentially leave a student on their own or with just one fellow-student for support. Such circumstances are perhaps unlikely to arise on general fieldcourses but could occur where independent fieldwork is undertaken as part of an individual research project or final year dissertation. Institutional safety policies on these matters must always be applied for all students, in addition to being alert to the special needs of students with medical conditions.

## 4.1 Some general support issues

### Possible solutions to general support difficulties

Difficulties	Solutions
<p>1. Accommodation</p> <ul style="list-style-type: none"> <li>• Shared room</li> <li>• Lack of individual bathroom facilities</li> <li>• Communal eating arrangements</li> <li>• Dietary issues, allergies</li> </ul>	<ul style="list-style-type: none"> <li>• Identify areas of difficulty prior to trip and secure alternative arrangements</li> <li>• Modifications (e.g. room-swaps) made to meet the needs of particular students.</li> </ul>
<p>2. Ergonomics</p> <ul style="list-style-type: none"> <li>• Fieldwork conditions may not be suitable for the comfortable use of computer-based learning or recording</li> <li>• Field centres may have very basic furniture – chairs, bench seating etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Peer 'buddy' to assist with recording or reading information</li> <li>• Non-medical helper paid for by DSA</li> <li>• Activities need to be broken up into smaller time frames</li> <li>• Student will require breaks</li> </ul>
<p>3. Need for personal helper (e.g. notetaker)</p>	<ul style="list-style-type: none"> <li>• Early notification of duration and place of fieldtrip</li> <li>• May be best to avoid appointing final year/post-graduate students because of time constraints of own workloads</li> <li>• Check with disability organisation or volunteer agencies (through University disability service or Skill) and/or in fieldwork location for suitable helpers</li> <li>• May need to arrange accommodation for helper</li> </ul>
<p>4. Medication</p>	<ul style="list-style-type: none"> <li>• Ask all students to complete medical questionnaire</li> <li>• Ensure student has adequate medical supplies</li> <li>• Identify system of securely storing medication</li> </ul>

## 4.2 Support issues for particular medical conditions

Different medical conditions, their characteristics and the action which should be taken

Medical Condition	Presentation	Provoking Factors	Action
Asthma	<ul style="list-style-type: none"> <li>• Difficulty breathing</li> <li>• Wheezing</li> <li>• Coughing</li> <li>• Difficulty speaking</li> </ul>	<ul style="list-style-type: none"> <li>• Cold</li> <li>• Exercise</li> <li>• Allergen, e.g. pollen, animals</li> <li>• Stressful situations</li> <li>• Can be worse at night</li> </ul>	<ul style="list-style-type: none"> <li>• Asthmatics should always carry their medication</li> <li>• Consider terrain and climate</li> <li>• First aid involves keeping the person comfortable, sitting them up, reassuring them and allowing them to use their inhaler. Seek medical help if needed.</li> </ul>
Diabetes and hypoglycaemia (low blood sugar)	<p>Emergency tends to be hypoglycaemic attack, with a sudden onset. They will:</p> <ul style="list-style-type: none"> <li>• Be weak, faint, hungry</li> <li>• Behave oddly</li> <li>• Sweat</li> <li>• Have cold, clammy, pale skin</li> <li>• A deteriorating response</li> </ul>	<p>Provoked by:</p> <ul style="list-style-type: none"> <li>• Excess exercise</li> <li>• Excessive alcohol</li> <li>• Lack of food</li> <li>• Illness</li> <li>• May also accompany heat exhaustion, hypothermia and epileptic fit</li> </ul>	<p>Consider:</p> <ul style="list-style-type: none"> <li>• Medical history</li> <li>• Access to emergency services. Oral sugar will need to be given if conscious</li> <li>• Regular mealtimes</li> <li>• Storage of medication, e.g. insulin in fridge</li> <li>• Person to be responsible for making provision for syringe disposal and emergency sugar supply</li> <li>• Consider hygiene if insulin-dependent</li> </ul>

<p>Epilepsy</p>	<p>Seizures may be a brief 'absence' or major when there is sudden collapse, stiffening of the muscles and jerking of the limbs. Alarming to witness but usually not life-threatening and often brief. Following a rest they can resume normal activity.</p>	<ul style="list-style-type: none"> <li>• Excess tiredness</li> <li>• Hypoglycaemia</li> <li>• Stress</li> </ul>	<ul style="list-style-type: none"> <li>• Safety of location depending on stability of the epileptic, e.g. working near cliff, water etc.</li> <li>• If unstable, consider buddy system/ supervision</li> <li>• Access to emergency services</li> <li>• Person may need recovery time and place</li> <li>• Person should take medication with them</li> </ul>
<p>Musculoskeletal disorders, e.g. arthritis, back pain</p>	<ul style="list-style-type: none"> <li>• Pain</li> <li>• Fatigue</li> <li>• Reduced stamina</li> </ul>	<ul style="list-style-type: none"> <li>• Negotiating difficult terrain</li> <li>• Long working sessions</li> <li>• Driving</li> <li>• Sitting</li> </ul>	<ul style="list-style-type: none"> <li>• May need to modify visit if terrain difficult</li> <li>• Consider using additional transport</li> <li>• Incorporate rest periods</li> </ul>
<p>Lung and kidney conditions</p>	<ul style="list-style-type: none"> <li>• Fatigue</li> <li>• Reduced stamina</li> <li>• Frequent absences</li> </ul>	<ul style="list-style-type: none"> <li>• Terrain</li> <li>• Length of work sessions</li> </ul>	<ul style="list-style-type: none"> <li>• May require privacy and facilities for treatments</li> <li>• May need to modify visit if terrain difficult</li> <li>• Consider using additional transport</li> <li>• Incorporate rest periods</li> </ul>
<p>Heart conditions, e.g. angina</p>	<ul style="list-style-type: none"> <li>• Chest pain</li> <li>• Reduced stamina</li> <li>• Fatigue</li> <li>• Breathlessness</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult terrain</li> <li>• Worse on exertion</li> <li>• Cold conditions</li> </ul>	<ul style="list-style-type: none"> <li>• Consider terrain and climate</li> <li>• Person should carry medication</li> <li>• Access to emergency services</li> <li>• Incorporate rest periods</li> </ul>

Chronic fatigue syndrome (ME)	<ul style="list-style-type: none"> <li>• Extreme fatigue</li> <li>• Reduced stamina</li> <li>• Frequent absences</li> </ul>	<ul style="list-style-type: none"> <li>• Arduous terrain</li> <li>• Strenuous work</li> <li>• Lengthy work sessions</li> </ul>	<ul style="list-style-type: none"> <li>• May need to modify visits if terrain difficult or person unable to participate</li> <li>• Consider using additional transport</li> </ul>
Mental health problems	<ul style="list-style-type: none"> <li>• Stress</li> <li>• Depression</li> <li>• Aggression</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of familiar surroundings and friends</li> <li>• Travel anxiety</li> <li>• Shared room</li> <li>• Drugs and excessive alcohol</li> </ul>	<ul style="list-style-type: none"> <li>• Student 'buddy' support</li> <li>• Select room mate carefully</li> <li>• Pre-visit discussion with counsellor</li> <li>• Mechanisms in place to allow early student return</li> </ul>

In compiling the above tables the authors would wish to acknowledge the major role played by Joan Fletcher (Health & Welfare Unit, University of Plymouth) and by Ros Catlow (South West Regional Academic Centre, University of Plymouth). Our thanks to them both.

## **5 The Student Voice**

### **Claire is a final year geographer with extensive fieldwork experience in the UK and overseas**

Fieldwork is the best thing about geography; a good way to learn

But it's difficult for me to make notes in the field

Please put more information in handouts distributed in advance of the trip

Ask guest lecturers to slow down

### **Robert is also an experienced final year geographer**

In marking the field note books, the staff did not seem to know about my dyslexia

I love fieldwork but submission deadlines immediately at the end of the course are just too tight. I can't work that fast

In group work I like to lead but I am not so good at fine-tuning the report. That's for others

I need the handouts well before getting on the coach

### **Penny is a first year geologist with dyslexia and Meares Irlen syndrome**

Reading in bright sunlight is especially difficult

Back in the lab I need a coloured filter over the light source in the microscope

### **Philippa is a final year Geology student with multiple disabilities – asthma, arthritis and dyslexia**

I enjoy fieldwork but can't walk far and get very tired: so it's hard to work in the evenings

It's difficult to remember all the instructions in field exercises ... I need regular reminders

A warm bath helps my joint pains. A shower in a cramped caravan isn't so good

Coloured paper and big print makes reading a lot easier

## 6 Some Closing Thoughts

By way of a brief summary, this guide closes with a list of some key general points. The intention here is not to repeat the detailed advice given earlier but rather to deduce from it a number of overarching principles. These provide a broad framework for action.

- If academics leading fieldwork are to provide appropriate student support, they will need training and guidance. This handbook, and the others in this series, are intended to offer a useful starting point. However, for academics to respond effectively to the new disabilities legislation and *Code of Practice*, an investment in relevant staff development is essential.
- Without sacrificing academic rigour or standards, academics will need to think more imaginatively about the different ways in which different students might be enabled to demonstrate their achievement of the intended learning outcomes for the programme, module or field exercise.
- For students studying degrees which include fieldwork, the additional demands created by fieldtrip participation need to be discussed when the student is applying for admission to the degree programme and at the point at which the DSA allowance is agreed.
- Information about detailed fieldwork plans, activities and itineraries needs to be shared with students and disabilities staff well in advance of the trip itself so that, if necessary, adjustments can be made to the programme, to the accommodation and travel arrangements and to the academic curriculum etc.
- For students with hidden disabilities there are often issues about disclosure, confidentiality and possible discrimination. Many such students do not want to be seen as 'special cases' requiring different or favoured treatment. Staff need to be sensitive to these concerns.
- Students must accept some measure of responsibility for their own learning, their own health and for working with academic and support staff to negotiate appropriate decisions about their participation in field activities. Students with hidden disabilities must acknowledge the possible consequences of non-disclosure which may put them at risk and break departmental safety policy.
- In future, academics will need to work more closely than they generally have previously with specialist colleagues responsible for disability services. This will open up new understandings and opportunities.
- Many of the measures needed to assist students with hidden disabilities are, however, no more than the delivery of general good practice. For example, many aspects of the layout of text for students with dyslexia would bring general benefits of clearer documentation for everyone. In this way dyslexia support can be a means for bringing generally improved standards of presentation.
- Full advantage should be taken of the new (and in some cases not so new) technologies to enhance fieldwork. Devices such as laptops, talking calculators and dictaphones can all be advantageous for students with

dyslexia. On occasion, and where suitable resources exist, 'virtual' fieldwork facilities may also be helpful, through the use of Web-sites and interactive software.

- Students with dyslexia often have counter-balancing strengths in other areas and feel disadvantaged by assessment systems which rely very heavily on essays. Fieldwork can be used as an opportunity to recognise strengths in areas such as verbal presentations and thereby help to level the assessment playing field.
- Fieldwork can be a very intense social as well as academic experience. For some students with hidden disabilities this will bring new opportunities but occasionally also new challenges. In monitoring and evaluating all aspects of fieldwork (academic and social) it is important to ensure that all opinions are sought and valued. For the students who have been the focal point of this fieldwork volume, their disabilities may be hidden but their voices must not be.

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Skill Web site: <http://www.skill.org.uk/>

Key information site. Broad range of information for students with disabilities in Further and Higher Education including funding, benefits, legislation etc. Site links to numerous other important and useful web sites.

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## Appendix 1

### Enabling Technology to Support Students with Dyslexia on Fieldwork

#### Software

Where a student has access to their own or a shared computer, the following software has proved to be very useful.

#### Screen / text readers

##### *TextHelp! Read & Write*

This screen reading software has word prediction, which has choices for the way the words are ordered, spell checking based on phonic errors, a thesaurus with dictionary definitions and a homophone checking with meanings. It works with most Windows programs but is a separate word processor package in the Mac. The voices, speed of speech and tones can be altered. Changing background colours, font colours and size changes is also easy. The vocabulary is large and adaptable to suit the user's needs.

The Mac version is called Type and Talk (£85) and there is also a basic screen reader (£25.49) that will work with most Windows programs.

Most useful for anyone with dyslexia but could be used by anyone with a mild visual impairment. It will read back what they have typed into Word.

Price: £135.13 inc. VAT

Suppliers: MicrolinkPC. iAnsys

#### Mindmapping / brainstorming

##### *Inspiration*

This is an easy program to use with clear menus and short cut keys and ideas held in chosen shapes which are linked in a spidergram appearance. It transfers the graphical diagram to the linear format within the program so that updates occur in either mode. As with all the programs, pictures can be imported or copied from other programs.

The company's Web site has many ideas and templates available for downloading as well as a trial version. Available for Mac and PC.

Price: £82.25 inc. VAT

Suppliers: MicrolinkPC, iAnsys

##### *System Settings – Mac and PC*

Both Mac and PC systems contain accessibility facilities.

##### *Windows98 / Microsoft Office*

There are accessibility options within Windows. Choose *Accessibility Options* from Settings/Control panel. From here adjustments can be made to keyboard, sound, mouse and general settings. The appearance of Windows can be altered to suit. High contrast, custom colours and large fonts are just some of the settings that can be changed.

MS Office contains many features that support people with differing disabilities. Typing 'accessibility' in the interactive Help facility lists the many things that are available. Among these are shortcut keystrokes, autocorrect and toolbar/button creation.

## **Dictaphone/Minidisk Record**

### *Gennexa (Optimus) CTR-115 voice-activated dictaphone*

This dictaphone takes full sized cassette tapes. It has a digital counter that allows you to check where you are on the tape. There is an internal speaker and external headphone socket. Also an internal microphone, with an external mix socket and remote socket. It uses 4 x AA batteries.

Price: £176.25 (inc headset, microphone, footswitch, batteries and re-charger, 25 C90 tapes) inc VAT

Suppliers: MicrolinkPC, Hagger Electronics

### *Sharp Minidisk – various models*

Mini-disks provide the ability to play or record for 148 minutes in mono. Access to material is virtually instantaneous. Tracks can be created, moved or erased with ease. Better sound quality is achieved by using an external microphone.

Price: With accessories from £293.75 inc. VAT

Suppliers: MicrolinkPC, Hagger Electronics

## **Electronic spellchecker / thesaurus**

Separate spellcheckers and thesaurus are available, however, we feel that it is good to have the two functions combined into one pocket-sized format. The speaking version is bigger though still portable.

### *Franklin pocket Collins dictionary and thesaurus DMQ440*

Phonetic spellchecker, complete definitions and inflections for 80,000 words from Collins. Thesaurus contains over 500,000 synonyms. Has a unique BOOKMAN ROM card slot, this enables them to add different publications. The *confusables* feature identifies and defines commonly confused words. Also has a personal user list which stores up to 50 words.

There is also a speaking version (LM6000 £293.75) for visually impaired students or those with severe dyslexia.

Price: £41.13 inc. VAT

Supplier: MicrolinkPC, iAnsys

## **Alphasmart**

This portable lightweight 80 character keyboard runs off 3 AA batteries for around 2-500 hours. Has a 4 x 40 character screen suitable for text-based work. Cable link or infrared to Mac or PC with 8 files (64 pages) of storage space. No software or floppy disks needed. Printer cable available and spell checker along with sticky keys, left/right hand and Dvorak keyboard options. New Applets Button downloads applets from a computer to extend AlphaSmart's functionality for keyboarding templates. Two-Way Transfer using Get Utility software, download any text from the Mac or PC to the AlphaSmart.

Applets include AlphaWord SmartApplet to Cut/Copy/Paste within and between files, a basic Calculator SmartApplet and a KeyWords SmartApplet for keyboarding instruction. Future applets will include quizzes, mindmapping and 'cloze' procedures for extending vocabulary.

Price: £276.13 inc VAT

Supplier: MicrolinkPC, iAnsys

## **Calculuscribe**

Calculuscribe is a 'clam shell' design portable keyboard (word processor and an interactive calculator), which has similarities to the AlphaSmart or QuickPAD. There are two models, the 'Uno' and the 'Duo'. The Duo has an 8 lines x 80 characters screen, and it offers a zoom feature (big font (16pt)/small font (8pt)). The Uno has a 4 lines x 40 characters screen (8pts). Both have a keyboard that is full-sized, sturdy and quiet. The Uno runs 300 hours on 3 AA alkaline batteries while the Duo runs 50 hours on 3 AA alkaline batteries.

The Calculuscribe's flip-top mechanism protects the screen from scratches and damage, protects the keyboard from dirt and spills, reduces screen glare by adjusting the viewing angle and has a generous space for resting wrists. The keyboard includes a variety of sticky key functions. Both have a file system with a menu, which supports named files, and optional folders with password. Navigation is by keyboard commands with regularly used ones for copying and pasting text etc. and a calculator is situated where you would normally find the glide pad on a laptop.

Connection to a computer for downloading text is by split cables although One-Key Send via cable or beam using an infra red port to the PC or a Mac. You can send files to any computer application or to a printer and InterAct by sending files to other Calculuscribes for collaborating.

Price: Duo £230 inc. VAT and the Uno £200 inc. VAT

Suppliers: MicrolinkPC, iAnsys

## **Talking calculators**

### *Talking scientific calculator*

A model is produced by the RNIB. Whilst primarily designed for students with visual impairment, it is also useful for students with severe dyslexia who require audio feedback. Read & Write from TextHelp! (see above) will read back from within Excel on a PC.

Price: £222.08 inc. VAT

Supplier: RNIB

### *Talking calculator (basic model)*

This talking calculator with LCD display is suitable for all general arithmetic work, such as checking bills, currency conversions etc. The synthetic female voice is clear, announcing each key pressed and the results of calculations. The keys are large, making the calculator easy to see. This model cannot be used with earphones. It is powered by 2 1.5 volt AA batteries.

Price: £12.20 inc. VAT

Supplier: Cobolt Systems Ltd

## **Supplier details**

Cobolt Systems Ltd  
The Old Mill House, Mill Road Reedham  
Norwich  
NR13 3TL  
Phone: +44 (0)1493 700172  
Fax: +44 (0)1493 701037  
Website: <http://www.cobolt.co.uk/>

Hagger Electronics  
Unit 22, Business Centre West  
Avenue One, Letchworth SG6 2BH  
Phone: +44 (0)1462 677331  
Fax: +44 (0)1462 675016  
Website: <http://www.hagger.co.uk/>

Royal National Institute for the Blind  
Bakewell Road  
Orton Southgate  
Peterborough PE2 6XU  
Phone: +44 (0)1733 370777  
Fax: +44 (0)1733 371555  
Website: <http://www.nib.org.uk/>

Iansyst Ltd  
The White House  
72 Fen Road  
Cambridge CB4 1UN  
Phone: +44 (0)1223 420101  
Fax: +44 (0)1223 426644  
Website: <http://www.dyslexic.com/>

Microlink PC  
31-32 Queens Terrace  
Southampton  
SO14 3BQ  
Phone: +44 (0)23 80 315151  
Fax: +44 (0)23 80 231621  
Website: <http://www.microlinkpc.co.uk>

See the TechDis Accessibility Database (NIAD) at  
<http://www.niad.sussex.ac.uk/> for comprehensive information.

## Appendix 2

### Some Organisations with Expertise in Hidden Disabilities and Dyslexia

#### **British Dyslexia Association (BDA)**

98 London Road, Reading, Berkshire, RG1 5AU  
Tel: +44 (0)1189 662677 Fax: +44 (0)1189 351927  
Represents and co-ordinates local dyslexia associations.

#### **Dyspraxia Foundation**

8 West Alley, Hitchin, SG5 1EG  
Tel: +44 (0)1462 454986 Fax: +44 (0)1462 455052  
Promotes understanding and offers information.

#### **Meares Irlen Syndrome Institute**

c/o 123 High Street, Chard, Somerset, TA20 1QT  
Tel/Fax: +44 (0)1460 65555  
Irlen Centres throughout the United Kingdom and Eire are committed to research experimental programmes and support to help those with perceptually-based problems often found in conjunction with specific learning difficulties.

#### **ME Association**

4 Corringham Road, Stanford-le-Hope, Essex, SS17 0AH  
Tel: +44 (0)1375 642466 Fax: +44 (0)1375 360256  
The ME Association provides an information line for general enquiries along with an extensive range of literature.

#### **O.A.S.I.S (On-line Asperger's Syndrome Information Resources)**

<http://www.udel.edu/bkirby/asperger/index.html>  
This site provides a 'first stop' for information about Asperger's Syndrome.

#### **Skill: National Bureau for Students with Disabilities**

The main UK body relating to students with disabilities which offers a wide range of information, advice and relevant publications.  
18-20 Crucifix Lane, London, SE1 3JW  
General enquiries – Tel: (voice or text) +44 (0)207 4500620 Fax: +44 (0)207 4500650  
Email: [admin@skill.org.uk](mailto:admin@skill.org.uk)  
Information lines – Tel: (free phone) +44 (0)800 3285050 (M-F13:30 - 16:30)  
Textphone: (free phone) +44 (0)800 0682422  
Email: [info@skill.org.uk](mailto:info@skill.org.uk)