



Geography, Earth and Environmental Sciences

New and Aspiring Lecturer's Resource Pack

What is the New and Aspiring Lecturer's Resource Pack?

There are many resources available to support the new or aspiring lecturer in developing their learning and teaching: so many, in fact, that it can often seem overwhelming. The GEES Subject Centre has put together this pack to provide carefully selected examples of available resources, covering a variety of different formats that you may find of use. Some come from within the GEES community and therefore have a discipline bias. Others are generic but still relevant. Some of the learning and teaching topics covered have been chosen, in part, because they map onto the professional standards required by all PG Certificates in Higher Education. Other topics are there because they are specific to the GEES disciplines.

These are not definite resource lists and they are by no means comprehensive! They simply show examples of the range of resources out there and they are a 'taster', a starting point for your consideration. Further resources and information can be found by visiting the GEES Subject Centre Resource Database at:

<http://www.gees.ac.uk/db/>

or the Higher Education Academy's 'Supporting New Academic Staff' (SNAS) web pages and database at:

<http://www.heacademy.ac.uk/SNAS.htm>

The SNAS pages also provide useful information on the current structure of UKHE and on acronyms currently in use. 'Frequently asked questions' are also considered, such as the qualifications needed to be a teacher or lecturer in a university, or whether funding is available for the further development of learning and teaching ideas.

Further information

Additional information on the GEES New and Aspiring Lecturer's Resource Pack, including a downloadable version, can be obtained from the GEES Subject Centre:

Tel: 01752 233560
Email: info@gees.ac.uk
Web page: <http://www.gees.ac.uk>

We are aiming to refresh and update the following resources lists on a yearly basis, thereby keeping the resources recommended useful and relevant. Please feel free to contact us if you come across any other resources that you think would be particularly useful to others: we value your input.

Please turn over for content

Content

Resource Examples

- General Resource Examples
- Research-Teaching Linkages
- E-Learning
- Assessment
- Fieldwork
- Curriculum Design
- Teaching Methodology
- Employability and Enterprise
- Key Skills
- Research into Student Learning (Pedagogic Research)
- Education for Sustainable Development (ESD)
- Practicals and Laboratory Work
- Scottish Enhancement Themes

General Resource Examples

Teaching Geography in Higher Education: a Manual of Good Practice

Gold, J.R., Jenkins, A., Lee, R., Monk, J., Riley, J., Shepherd, I. & Unwin, D.

An online text concerned primarily with the practicalities of teaching geography in higher education and written for anyone with a current, or prospective, interest in such teaching. The authors aim to challenge readers to reflect on why they teach geography and to supply a guide to good practice, using their own practical experiences of teaching in higher education in Britain, Australia and North America. Although published in 1991, this is still a worthwhile reference text.

Publisher: Basil Blackwell Ltd.

Date: 1991

Availability: Free for download from the Geography Discipline Network (GDN) website at:
<http://www2.glos.ac.uk/GDN/gold/index.htm>.

Benchmarking Statements for the GEES Disciplines

Various authors

The benchmarking statements for Geography, and for Earth Sciences, Environmental Sciences and Environmental Studies (ES3) have been developed as a means for the discipline community to describe the nature and characteristics of programmes in specific subjects. They also represent general expectations about the standards for the award of qualifications at a given level and articulate the attributes and capabilities that those possessing such qualifications should be able to demonstrate. They can be used as a source of reference for HE institutions when new programmes are being developed and for guidance for articulating the learning outcomes associated with the programme. They have also been written to provide for variety and flexibility in the design of these programmes and encourage innovation within an agreed overall framework. These two benchmarking statements have recently been updated.

Publisher: The QAA

Date: 2007

Availability: Honours degree statements for Geography and for ES³ are available from the QAA website at:
<http://www.qaa.ac.uk/academicinfrastructure/benchmark/honours/default.asp>.

Advice on Using the ES³ Benchmarking Statement

Thomas, N.

The paper represents the personal views of Dr Neil Thomas on the application to the Earth Sciences of the Benchmarking Statement for Earth Sciences, Environmental Sciences and Environmental Studies. It aims to guide readers through the benchmarking statement by focussing on the key issues and suggesting how the statement may be interpreted.

Publisher: Cheltenham, Geography Discipline Network (GDN)

Date: 2000

Availability: Available as an online paper at: <http://www2.glos.ac.uk/gdn/qaa/es3.htm>.

A Handbook for Learning and Teaching in HE: Enhancing Academic Practice

Fry, H., Ketteridge, S. & Marshall, S.

This publication is aimed at lecturers, teachers and tutors in HE together with staff and education developers and focuses on developing professional academic skills in terms of teaching, student learning, research, career development and subject excellence. The second edition also reflects on changes in HE in technology, subjects, numbers, priorities and professional development and includes case studies and vignettes.

Publisher: Routledge Falmer

Date/Edition: 2002, Second edition

ISBN: 0749437995

Staff and Educational Development Association (SEDA) Lecturers' Packs

Various authors

These packs are designed to support lecturers in both higher and further education environments. They include the following titles:

Pack 1: Lecturing to Large Groups; Teaching and Learning in Small Groups; Getting to Grips with Assessment; Developing Your Teaching Through Reflective Practice; Key Skills in Higher Education.

Pack 2: Getting to Grips with Resource-Based Learning; Enhancing Student Learning; Academic Tutoring; Promoting Peer Assisted Learning Amongst Students in Higher and Further Education; Leading Academic Programmes and Courses.

Publisher: Staff and Educational Development Association (SEDA)

Availability: To buy hard copy from SEDA, further information at: <http://www.seda.ac.uk/pubs/lecturerspacks.htm>.

Giving a Lecture: from Presenting to Teaching

Exley, K. & Dennick, R.

From the 'Effective Teaching in Higher Education' Series. This guide uses a multi-disciplinary approach to give straightforward and practical advice to the new university lecturer.

Publisher: Routledge Falmer

Date: 2004

ISBN: 0415307198

The items listed above are just a few examples of the available resources covering general learning and teaching from both a generic and a GEES discipline perspective. For more, visit:

The GEES SC Resource Database at: <http://www.gees.ac.uk/db/>
The SNAS database at: <http://www.heacademy.ac.uk/snasdatabase.asp>

Research-Teaching Linkages Resource Examples

“Linking teaching and research is a topic of international interest, as recent studies in Australia (Zubrick et al., 2001), the UK (Southampton Institute, 2000), and the United States (Boyer Commission, 1998, 2001) indicate. For many people a key characteristic of a university is the bringing together of teaching and research. However, a great deal of the discussion about the links between teaching and research is over-simplified and based on anecdotal evidence. Although there is much research showing that there is little if any relationship between research productivity and teaching excellence (see reviews in: Hattie and Marsh, 1996; Marsh and Hattie, 2002), there is a growing amount of evidence to show that students may benefit from research activity, but for this to be maximised the linkage has to be constructed and planned for explicitly (Jenkins et al., 2003).” (Extract from an essay on ‘Linking Teaching and Research in Geography, Earth & Environmental Sciences’ by Mick Healey. The essay can be found on the GEES Subject Centres web site at: <http://www.gees.ac.uk/linktr/linktr.htm#ltringees>.)

Linking Teaching and Research and undertaking Pedagogic Research in Geography, Earth and Environmental Sciences

Various authors

This special edition of Planet, the journal from the GEES Subject Centre, covers two major issues in the GEES disciplines in HE at present: namely linking teaching and research and pedagogic research in the disciplines. The pedagogic research section of the journal brings together papers written as part of the GEES Subject Centre national programme of discipline-based pedagogic research based around the common theme of fieldwork.

Publisher: The GEES Subject Centre

Date/Edition: 2003, Planet Special Edition 5

Availability: Available for free download from the GEES Subject Centre website as a PDF from:
<http://www.gees.ac.uk/pubs/planet/index.htm#PSE5>.

Research and Teaching: Beyond the Divide

Brew, A.

This publication asks how universities can develop the relationship between research and teaching so that research is enhanced and teaching is improved. Using examples, conversations and critical inquiry, it suggests that inclusive scholarly knowledge-building communities of both students and academic staff should result from the development of research-enhanced and evidence-based teaching, teaching-enhanced research, and the erosion of the institutional and cultural factors in higher education that currently undermine attempts to link research and teaching.

Publisher: Palgrave Macmillan

Date: 2006

ISBN: 1403934355

Linking teaching and research in disciplines and departments

Jenkins, A., Healey, M. & Zetter, R.

This paper seeks to support the development of effective links between teaching and discipline-based research in disciplinary communities and in academic departments. It is aimed in particular at staff who wish to connect their teaching and research roles; those with leadership roles for teaching and for research in departments and institutions; and educational developers, researchers and support staff within institutions, in disciplinary communities and in academic departments.

Publisher: The Higher Education Academy

Date: 2007

Availability: Freely available as PDF on the Higher Education Academy web page at:
http://www.heacademy.ac.uk/assets/York/documents/LinkingTeachingAndResearch_April07.pdf.
To order hard copies free of charge, please email: enquiries@heacademy.ac.uk.

Research-Led Teaching and Learning project (RLTL 2)

Various authors

The Research-Led Teaching and Learning 2 (RLTL2) project ran from 2003 – 2006 and was directed by Barbara Zamorski. It builds on the work undertaken during the original RLTL project from 2002 and aims to investigate and help strengthen the relationship between research and teaching and learning.

The project web page provides information about research-led teaching and learning and a resource section with examples of case studies collected at the University of East Anglia.

Publisher: University of East Anglia

Date: 2003 - 2006

Availability: All information is freely available on the project web page at: <http://www.uea.ac.uk/lhi/rltl/index.html>.

Linking Teaching and Research in an Undergraduate Fieldwork Module: a case study

Hill, J., Woodland, W. & Spalding, R.

This article, published in Planet, provides an example of linking teaching and research within an undergraduate fieldwork module. It highlights student perceptions of the learning and assessment experience and it examines quantitatively the extent to which students were successful in deep learning.

Publisher: The GEES Subject Centre

Date/Edition: 2004, Planet issue 13, pp.4-7

Availability: Hard copy freely available. Please contact the GEES Subject Centre for details at: info@gees.ac.uk.
Also available as a PDF from: http://www.gees.ac.uk/pubs/planet/p13/p13_1.pdf.

The items above are just a few examples of the available resources covering research-teaching linkages from both a generic and a GEES discipline perspective. For more, visit:

The GEES SC Resource Database at: <http://www.gees.ac.uk/db/>
The SNAS database at: <http://www.heacademy.ac.uk/snasdatabase.asp>

E-Learning Resource Examples

Higher Education institutions face a growing challenge to develop and adapt their provision to the circumstances of the 21st century, and to allow greater flexibility for today's large and diverse student body. In addition, there is the fast pace of change - including technological, political, social and economic - which impacts on higher education from the external environment. Taking into account these influences, Flexible Delivery has been interpreted in the widest possible sense, to encompass not only modes of study, but also methods of delivery, together with underpinning support and infrastructure.

E-learning in the UK: Perspectives from GEES practitioners

France, D. & Fletcher, S.

This article, published in Planet, summarises the findings from a UK-wide survey of practitioners in the Geography, Earth and Environmental Sciences disciplines (GEES), which aimed to establish the current use, re-use and development of e-learning materials. The article reports on the use of different e-learning approaches in the GEES disciplines in the UK and presents what support practitioners viewed as necessary to enhance their use of e-learning.

Publisher: The GEES Subject Centre

Date/Edition: 2007, Planet issue 18, pp.3-5

Availability: Freely available as PDF from the GEES Subject Centre web page at: <http://www.gees.ac.uk/pubs/planet/p18/df.pdf>. For a hard copy, please contact: info@gees.ac.uk.

GeographyWeb project

Between 1997 and 1998, the GeographyWeb project at the University of Colorado created internet-based instructional materials and course homepages for Geography departments in the US. The web page contains links to five e-learning example lessons from different Geography departments, covering different subject areas, e.g. a virtual field study lessons, flood hazards, and an interactive learning module about volcanic hazards in the US.

Publisher: Center for Geography Education, University of Colorado

Date: 1997 – 1998

Availability: All lessons are freely available for instructional purposes at the university's web page at: www.colorado.edu/geography/extra/geogweb/geogweb.html.

Effective Practice with E-learning Guide

Joint Information Systems Committee (JISC)

This guide illustrates some of the key issues in designing for learning and offers an insight into how e-learning can be integrated into established practice to benefit both learners and practitioners. It is built around a sequence of 10 case studies illustrating practitioners' solutions to day-to-day challenges. An updated version of this guide will be released in 2008.

Publisher: Joint Information Systems Committee (JISC)

Date: 2004 (a new version will be released in 2008)

Availability: http://www.jisc.ac.uk/whatwedo/programmes/elearning_pedagogy/elp_practice.aspx

E-tivities - The Key to Active Online Learning

Salmon, G.

This publication provides ideas for lecturers and online tutors with practical and tested approaches to engaging learners in online discussions. The publication aims to encourage lecturers to try out the e-learning medium, and emphasises the educational benefits of communication.

Publisher: Routledge Falmer

Date: 2002

ISBN: 0749436867

Videoconferencing Cookbook

Various authors

This web page provides detailed information on the use of videoconferencing for both beginners and advanced users of videoconferencing tools. The authors of this web page introduce a variety of technologies available today and provide guidelines on how to use these tools. This web page would be of use for all members of the higher education and research community who wish to set up a video conference or to advance existing videoconferencing skills.

Publisher: Video Development Initiative

Date: 2005 (last updated)

Availability: Free access to all resources at: <http://www.videnet.gatech.edu/cookbook.en/>.

Rethinking Pedagogy for a Digital Age: Designing and Delivering E-Learning

Beetham, H. & Sharpe, R. (Eds.)

This book examines different perspectives on effectively designing and delivering learning activities to ensure that future development is pedagogically sound, learner focused and accessible. It considers key topics including: specific activities for achieving learning outcomes; classifies and clarifies technologies' uses for learning and its role in educational design; current systems and future developments; learners' competencies and approaches; designing for mobile technologies; practitioner development; and, sustainability, organisational barriers and learning communities. Illustrated by case studies from the disciplines and with a helpful appendix of tools and resources for researchers, practitioners and teachers, this book is an essential guide to effective design and implementation of e-learning activities.

Publisher: Routledge Falmer

Date: 2007

ISBN: 0415408741

The above items are just a few examples of the available resources covering e-learning from both a generic and a GEES discipline perspective. For more, visit:

**The GEES SC Resource Database at: <http://www.gees.ac.uk/db/>
The SNAS database at: <http://www.heacademy.ac.uk/snasdatabase.asp>**

Assessment Resource Examples

There is considerable choice available when selecting assessment options, yet experience shows that only a fraction of these are normally employed in higher education. It is important to recognize that traditional forms of assessment (such as unseen exams) reward certain types of knowledge and skills, but undervalue others. Moreover, traditional assessment creates a particular framework within which learning takes place; change that framework and you can completely change the way in which students learn. The first round of UK QAA subject reviews revealed that on the whole traditional methods still dominate, with the continued prevalence of a culture of exams and written coursework. The references listed below aim to provide not only a 'subject spin' on assessment, but also to cover subject specific issues in assessment, such as assessing fieldwork and dealing with the interdisciplinarity of the GEES subject areas.

Assessment in the Earth Sciences, Environmental Sciences and Environmental Studies

Boyle, A. & Hughes, P.

This is one of a series of guides aiming to provide academics teaching in Earth Science, Environmental Science and Environmental Studies in higher education with support and ideas for their practice. The guide aims to provide a conceptual and practical outline of the teaching, learning and assessment system. It reviews key aspects of the general debate around assessing learners in HE and discusses the role of assessment in particular issues and themes that are central to the GEES disciplines.

Publisher: The GEES Subject Centre

Date: 2005

Availability: Available free for download from the GEES Subject Centre website at:
<http://www.gees.ac.uk/pubs/guides/assess/assess.htm>. Hard copy freely available.

Contact the GEES Subject Centre for details at: info@gees.ac.uk.

Sitting Exams in a Second Language: Minimising Bias, Maximising Potential

Schmitt, D.

This guide aims to offer advice and assistance to lecturers who have international students in their modules, particularly students for whom English is a foreign language (EFL). The aim is to focus on points within the teaching, learning and assessment cycle for taking action to minimize any potential bias against international students in exams. The goal is to ensure that differences between students' performances on exams are not due to language proficiency or lack of understanding of exam procedure, but rather due to differences in their discipline-related skills, abilities and knowledge.

The guide introduces two areas where changes to lecturers' behaviours or practices have the potential to result in improved or maximised international student performance on exams, which are changes to exam papers and teaching and learning practices.

Publisher: Assessment Standards Knowledge Exchange (ASKe), Oxford Brookes University

Date: 2007

Availability: <http://www.brookes.ac.uk/services/hr/eod/guides/exams/exams-second-language.pdf>

The Art of Assessing

Race, P.

A generic text that, in discussing the many forms that assessment can take, argues that diversity in methods of assessment leads to fairer assessment. A useful reference in the context of widespread discussions about broadening approaches to assessment.

Publisher: Staff and Educational Development Association (SEDA)

Date: 1995

Availability: Available free for download at:
<http://www.londonmet.ac.uk/deliberations/assessment/art-of-assessing.cfm>

Examples of Good Practice in Earth Science Learning and Teaching: Assessment and Computer-based Assessment

Various authors

These online proceedings consist of a series of case studies covering assessment in Earth Sciences. The case studies stem from a series of national conferences and workshops aimed at providing a forum for discussion and the promotion of good practice in Earth Sciences learning and teaching.

Publisher: The Earth Science Staff Development Project

Date: 2000

Availability: Free for download from the GEES Subject Centre web page at:
<http://gees.ac.uk/essd/goodpractice.htm>.

Conditions Under Which Assessment Supports Students' Learning

Gibbs, G. & Simpson, C.

A paper stemming from the Formative Assessment in Science Teaching (FAST) project, designed to investigate the building of assessment to support student learning more effectively. This paper focuses on the evaluation of assessment arrangements and the way they affect student learning outside of the classroom. The authors propose a set of 'conditions under which assessment supports learning' which are offered as a framework for teachers to review the effectiveness of their own assessment practice.

Publisher: Learning and Teaching in Higher Education (LATHE), University of Gloucestershire

Date/edition: 2004-05, issue 1

Availability: Available online from the LATHE website at:
<http://resources.glos.ac.uk/tli/lets/journals/lathe/index.cfm>.

The above items are just a few examples of the available resources covering assessment from both a generic and a GEES discipline perspective. For more, visit:

**The GEES SC Resource Database at: <http://www.gees.ac.uk/db/>
The SNAS database at: <http://www.heacademy.ac.uk/snasdatabase.asp>**

Fieldwork Resource Examples

Fieldwork is often seen by practitioners in Geography, Earth and Environmental sciences (GEES) as an essential element within the GEES curricula, providing the opportunity for students to gain first-hand experience of theoretical issues away from the classroom. The term covers the full range of activities which extend from a short excursion out from the institution, through half-day and day trips, to large scale residential field courses, and can cover UK-based or international, regular short trips or residential. Fieldwork can involve close student guidance and supervision, or may involve students' devising and executing projects largely independently of staff. A more recent addition to the student's experience of fieldwork is the use of computer-based support both pre- and post-fieldwork, providing a visual environment for exploring spatially referenced information.

Fieldwork and Dissertations in Geography

Livingstone, I., Matthews, H. & Castley, A.

This guide is split into two units which discuss fieldwork and dissertations respectively. The fieldwork unit discusses some of the key issues in the provision of fieldwork in higher education: the purpose of fieldwork; preparing students and follow-up activities; types and styles (including virtual fieldtrips); costing (staff time and student finances); choosing locations; equal opportunity; assessment; and where fieldwork fits into the curriculum. The dissertation unit looks at the appropriateness of dissertations in geography undergraduate courses; discusses some of the advantages and disadvantages of using this form of assessment; and analyses the ways in which students can be supported. A number of case studies are included.

Publisher: Cheltenham, Geography Discipline Network
Date: 1998
Availability: Available at cost from: <http://www.glos.ac.uk/gdn>.
ISBN: 186174028 X

Teaching Geoscience through Fieldwork

Butler, R.

This is the most recent guide of our Learning and Teaching guide series aiming to provide academics teaching in Earth Science, Environmental Science and Environmental Studies in higher education with support and ideas for their practice.

The guide sets out the academic and professional rationale for geoscience fieldwork and explores a number of key practical issues relating, for example, to fieldwork design, location, assessment and resourcing. The text also provides useful information on health and safety issues and the implications of the new BS8848 Standard.

Publisher: The GEES Subject Centre
Date: 2008
Availability: Hard copy freely available. Contact the GEES Subject Centre for details at: info@gees.ac.uk. Also available as PDF on the GEES web page at: <http://www.gees.ac.uk/pubs/guides/eesguides.htm#fwgeosguide>.

Teaching Research through Field Studies: a Cumulative Opportunity for Teaching Methodology to Human Geography Undergraduates

Panelli, R. & Welch, R.V.

This paper considers the debate about how fieldwork should be taught to undergraduate students, with the authors arguing that field studies should follow the teaching of research methodologies. Relevant literature on the place of fieldwork in geography training is reviewed and other necessary skills, such as problem solving are considered.

Publisher: Journal of Geography in Higher Education, Carfax Publishing Ltd.

Date/edition: 2005, 29 (2)

Availability: Institutional or personal subscription. Abstracts available from the Geography Discipline Network (GDN) at: <http://www.glos.ac.uk/gdn>.

The Virtual Field Course project

The Virtual Field Course project, hosted by the Department of Geography at the University of Leicester, aimed to provide computer-based support for fieldwork and a visual environment for exploring spatially referenced information.

The project was funded by the Joint Information Systems Committee (JISC) and has provided free software and educational resources to support fieldwork. The web page contains different software components and a database containing useful fieldwork-related information.

Publisher: The Virtual Field Course

Date: 1996 -1999 (web page last modified: 1999)

Availability: All resources are freely accessible at: <http://www.geog.le.ac.uk/vfc/>.

Learning Support for Disabled Students Undertaking Fieldwork and Related Activities

Various authors

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 and was carried out by the Geography Discipline Network (GDN). The project's aim is to research, develop and disseminate good learning and teaching practices in geography and related disciplines. There are six guides in the set, each guide is written for academics involved in the design and delivery of fieldwork and for disability specialists.

Publisher: Cheltenham, Geography Discipline Network (GDN)

Date: 2001

Availability: Available as PDF on the GDN web page at:

<http://www2.glos.ac.uk/gdn/disabil/print.htm>. Hard copies are available at cost from:

<http://www2.glos.ac.uk/gdn/disabil/dishard.htm>.

The above items are just a few examples of the available resources covering fieldwork from both a generic and a discipline perspective. For more, visit:

The GEES SC Resource Database at: <http://www.gees.ac.uk/db/>
The SNAS database at: <http://www.heacademy.ac.uk/snasdatabase.asp>

Curriculum Design Resource Examples

As a new member of staff, you may well be involved in curriculum development from the start, but hopefully in the company of supportive colleagues. The first resource in the list below, although specifically aimed at Geographers, is worth a look by all subject teachers not only for its ample introduction to the nature of curriculum development as a form of 'scholarship' in its own right, but also for its acceptance of the practical side of curriculum development: that is, who is actually teaching?; what resources do we have available?; how can we assess? Curriculum design is important because it allows members of staff to put into the centre of teaching their fascination with their subject and build in their own research interests. It also allows the department to address current thinking in learning and teaching in HE, for example dealing with employability of students through the embedding of key skills within the curriculum.

Curriculum Design in Geography

Jenkins, A.

This Guide is mainly addressed to a course team. It discusses an overview of the curriculum, setting out its meaning and importance and the political context in which geography curricula are designed. A model of curriculum design is presented and case studies are included for four departments of geography, in each case focusing on a key principle that has shaped that curriculum (staff research interests; integrating physical and human geography; value added; and cybermedia). The Guide concentrates on the undergraduate curriculum, as that is the 'core activity' of most departments, though the basic principles can be applied to the growing number of taught postgraduate courses.

Publisher: Cheltenham, Geography Discipline Network (GDN)

Date: 1998

Availability: Available at cost from: <http://www.glos.ac.uk/gdn>.

ISBN: 1861740336

First Words on Course Design

Baume, D.

This text-based resource provides a very practical guide to course design, covering writing aims and learning outcomes, structuring and sequencing content and learning activities. A version is also available as an online resource (see Availability).

Publisher: Oxford Centre for Staff and Learning Development

Date: 08/2006 (last modified)

Availability: <http://www.brookes.ac.uk/services/ocsd/firstwords/fwconts.html>

A Staff Resource Book to Support Earth Science Learning and Teaching in Higher Education: Curriculum Development

Various authors

This staff resource book produced by the Earth Science Staff Development project aims to be a guide and stimulus for either individual teachers or teaching teams to encourage the development of new resources and methods of teaching and assessment. Case studies, workshop questions, references and even 'off the shelf' ideas and resources are included. Section three looks at module and curriculum development and provides information and attachments to guide readers through the development process.

Publisher: The Earth Science Development Project

Date: 2000

Availability: Available free for download from the GEES Subject Centre web page at:
<http://www.gees.ac.uk/essd/resource.htm>.

Designing a curriculum that values a research-based approach to student learning in Geography, Earth and Environmental Sciences

Jenkins, A.

This Planet article sets out a range of strategies that individuals and course teams in GEES can use to examine their current courses and strengthen teaching/research connections to benefit student learning in these disciplines.

Publisher: The GEES Subject Centre

Date/Edition: 2003, Planet Special Edition 5, pp.2-5

Availability: Available online at: <http://www.gees.ac.uk/pubs/planet/#PSE5>.

Engaging Students in Active Learning: Case Studies in Geography, Environment and Related Disciplines

Healey, M. & Roberts, J. (Eds)

This series of 27 case studies stems from a 'swapshop' workshop on this topic, with the aim of taking stock of the wide range of forms of active learning that take place in GEES courses. The methods described are all in active use by practitioners and detail is provided to enable practical application by the reader.

Publisher: Cheltenham, Geography Discipline Network (GDN)

Date: 2004

Availability: Available either as free PDF or rtf from the GDN website, or for purchase as hard copy. Further details at: <http://www2.glos.ac.uk/gdn/active/student.htm>.

The above items are just a few examples of the available resources covering curriculum development in both the GEES and generic disciplines. For more, visit:

The GEES SC Resource Database at: <http://www.gees.ac.uk/db/>
The SNAS database at: <http://www.heacademy.ac.uk/snasdatabase.asp>

Teaching Methodology Resource Examples

The GEES subjects, like all other disciplines, have specific methods of teaching that work particularly well for them and indeed, could be said to be part of the culture of those subjects. One example, covered in a previous section, is fieldwork, used in different ways by all GEES subjects. Other, 'newer', teaching methodologies are now being used by practitioners, such as group work, experiential learning (sometimes termed 'active' learning), resource-based learning and problem-based learning. The resources highlighted here provide examples of a range of teaching methodologies.

Using Games, Simulations and Interactive Case Studies: a Practical Guide for Tertiary-level Teachers

Ellington, H. & Earl, S.

This text considers the use of games, simulations and interactive case studies with groups of students. The authors cover the general characteristics of such exercises and their main educational uses. They also provide practical guidance on how to choose exercises for a particular educational purpose and how to run them with a group of students. Information is given on how to modify existing exercises and how to design one from scratch. Illustrative case studies, references and a bibliography are also provided. Full documentation for three exercises (copyright cleared for educational purposes) has been made available with a bias towards the subject areas of environmental sciences and physical geography.

Publisher: Staff and Educational Development Association (SEDA)

Date: 1998

Availability: Available from the SEDA website at: <http://www.seda.ac.uk/publications.htm>.

Group Project Work and Student-centred Active Learning: Two Different Experiences

Livingstone, D. & Lynch, K.

This article compares two experiences of group-based student projects in a Geographical Information Systems (GIS) degree and in Geography degree modules. The two authors adopted group projects from similar motivations, and used available materials to guide them through this process. This paper provides an educational perspective to the two case studies, reflects on the experience and examines the theoretical dimensions of such an approach.

Publisher: Journal of Geography in Higher Education, Carfax Publishing

Date/Edition: 2002, 26 (2)

Availability: Institutional or personal subscription.

Practical and Laboratory work in Earth and Environmental Sciences: Guide to Good Practice and Helpful Resources

Williams, I.

The purpose of this guide is to discuss and promote the value of practicals and laboratory work in the teaching of the Earth and Environmental Sciences. The guide suggests ways to improve the quality of learning that practicals can provide, outlines new ideas and suggests texts and resources that may be useful.

Publisher: The GEES Subject Centre

Date: 2006

Availability: For a free hard copy, please contact the GEES SC for details at: info@gees.ac.uk.

Problem-based Learning: an Introduction

Overton, T.

This short generic primer introduces the concept of problem-based learning, answering a number of questions such as: what outcomes can be expected from using this approach?; how does it work in practice?; and what are the advantages and disadvantages?

Publisher: The Physical Sciences Subject Centre

Date: 2005

Availability: Available as a PDF at:
http://www.heacademy.ac.uk/assets/ps/documents/primers/primers/ps0087_problem_based_learning_mar_2005.pdf.

Resource-based Learning in Geography

Healey, M.

This guide looks at whether resource-based learning can enhance the quality of the student learning experience. A number of case studies are included.

Publisher: Cheltenham, Geography Discipline Network (GDN)

Date: 1998

Availability: Available at cost from: <http://www.glos.ac.uk/gdn>.

ISBN: 1861740298

The above items are just a few examples of the available resources covering teaching methodologies in both the GEES and generic disciplines. For more, visit:

The GEES SC Resource Database at: <http://www.gees.ac.uk/db/>
The SNAS database at: <http://www.heacademy.ac.uk/snasdatabase.asp>

Employability and Enterprise Resource Examples

Higher Education in the UK is now, more than ever, expected to prepare students for the world of work, with universities and colleges in the mainstream of economic and social change. Government has recognised that a good supply of highly-skilled and employable graduates is essential for national economic and social well-being: as such, HE is now being asked to ensure that graduates are equipped with the knowledge and skills which will enable them to contribute effectively to the nation's prosperity. With the introduction of student loans and top-up fees, students are increasingly looking for subjects and courses which will assist them in obtaining employment and in developing a future career. With these drivers in mind, the QAA has issued a Code of Practice on Careers Education, Information and Guidance (CEIG) which calls for close co-operation between academic departments and careers units in order to ensure a more systematic and effective approach to students' careers education. Recommendations include incorporating CEIG into learning and teaching strategies and making explicit the links between CEIG and programmes of study. The GEES disciplines have been involved in these new developments for a number of years and have responded to these calls for change through, for example, embedding key skills into the curriculum, introducing work-based learning and entrepreneurial skills training. Many departments have already adapted their curricula to include innovative approaches to developing their students' employability skills (see Key Skills Resource Examples section).

Context

Kneale, P. and various

Context is a website developed by the School of Geography at the University of Leeds. The website holds case study materials for use with students in the areas of group work, decision making and experience of work. The materials are based as closely as possible on real work situations and issues (including business, government and the voluntary sector). In addition, case studies are included that cover academia and the concept of entrepreneurship (defined as 'the art of working within an organisation to effect change) and materials covering the development of career skills.

Publisher: University of Leeds

Availability: Freely available at: <http://www.geog.leeds.ac.uk/courses/other/casestudies/>.

Preparing Geography, Earth and Environmental Science (GEES) Students for Employment in the Enterprise Culture Maguire, S. & Guyer, C.

This paper illustrates how one department has addressed the issues surrounding the preparation of students for a 'portfolio' career, providing them with the skills for identification and capitalisation on entrepreneurial opportunities. In particular, the authors describe the introduction of a module in 'enterprise and employability' and outline the pedagogic principles underpinning the module's design and implementation and the impact it has had on the students' experience.

Publisher: Journal of Geography in Higher Education, Carfax Publishing Ltd.

Date/Edition: 2004, 28 (3)

Availability: Institutional or personal subscription. Abstract freely available from the Geography Discipline Network (GDN) website at: http://www2.glos.ac.uk/gdn/jghe/28_3.htm.

Geography, Earth and Environmental Sciences Employability Profiles Resource Pack

Various authors

This resource pack contains profiles of the GEES disciplines written from an 'employability' perspective. The profiles are intended to assist students in articulating the subject dimension of what they have to offer employers: that is, what was their degree about and what qualities it has helped them develop. These profiles are summaries that are designed to emphasise the skills, knowledge and competencies our students can offer employers. The pack also provides advice for students and staff on how the profiles can be used to enhance students' job seeking preparedness.

Publisher: The GEES Subject Centre

Date: 2006

Availability: Hard copy freely available. Please contact the GEES Subject Centre for details at: info@gees.ac.uk. Also available as web pages and as an rtf from the GEES Subject Centre web page at: <http://www.gees.ac.uk/projtheme/emp/empprofs.htm>.

Enterprise, Skills and Entrepreneurship Resource Pack

King, H. (Ed.)

This pack provides a collection of information, ideas and examples of practice, intended to provide a starting point for those interested in including elements of enterprise/ entrepreneurship within their modules in GEES.

Publisher: The GEES Subject Centre

Date: 2006

Availability: Hard copy freely available. Please contact the GEES Subject Centre for details at: info@gees.ac.uk. Also available as web pages and as an rtf from the GEES Subject Centre web page at: <http://www.gees.ac.uk/projtheme/entrep/entrep.htm>.

Employability within Geography, Earth and Environmental Science

Gedye, S. & Chalkley, B.

This publication originates from research carried out by the GEES Subject Centre and opens with a brief discussion of what is meant by employability and why it has become such a key issue in HE today. Later chapters deal with specifics such as curriculum design, work-based learning, employee attributes and the development of students' career management skills. The authors have provided a mixture of principles and practice, with ideas illustrated by examples and case studies.

Publisher: The GEES Subject Centre

Date: 2006

Availability: Hard copy freely available. Contact the GEES Subject Centre for details at: info@gees.ac.uk. Also available online: <http://www.gees.ac.uk/pubs/guides/emp/geesemployability.pdf>

The above items are just a few examples of the available resources covering employability and enterprise in both the GEES and generic disciplines. For more, visit:

The GEES SC Resource Database at: [http:// www.gees.ac.uk/db/](http://www.gees.ac.uk/db/)
The SNAS database at: <http://www.heacademy.ac.uk/snasdatabase.asp>

Key Skills Resource Examples

The teaching of key skills is now high on the educational agenda, with the GEES subjects dealing with this issue in different ways. Although these skills have been taught within the GEES subjects for many years now, they have often been part of a 'hidden curriculum'. Due to the government level push towards student employability and the issues surrounding this topic, there has been a move towards addressing the development of these key skills (also known as transferable skills) in a more explicit manner, so that students and employers are clear about what has been gained from the student's experience of studying their subject of choice. The resources listed here address the teaching of key skills to GEES students within the teaching climate described above.

Helping Earth Science Students to Develop Key Skills: a Portfolio of Curriculum Exercises

Various authors

This portfolio of curriculum exercises has been developed by Earth Sciences academics. The portfolio concentrates on providing exercises and case studies that can be used to develop the skills that help students prepare for employment and shape their own personal and career development.

Publisher: The UK Earth Sciences Personal & Career Development Network

Date: 1998

Availability: Available free as hard-copy from the GEES Subject Centre at: info@gees.ac.uk.

Key Skills in Geography in Higher Education

Various authors

This series of guides, comprising 8 in total, were developed as an output of the 'Key Skills in Geography in Higher Education' project and aim to help Geography practitioners address the issues involved in developing the key skills of their students. Seven of the Guides are aimed at staff, whilst one has been written specifically for students. The set of Guides comprise of the following titles: Key Skills: Teaching and Learning for Transfer; Assessing and Recording a Skills-based Curriculum; Improving Students' Communication Skills; Improving Students' Numeracy Skills; Improving Students' Team and Personal Skills; Improving Students' Problem-solving and Thinking Skills; Improving Students' Skills Through Work-based Learning; and Geography at University: Making the Most of Your Geography Degree and Courses.

Publisher: Cheltenham, Geography Discipline Network (GDN)

Date: 1998

Availability: Available at cost from the Geography Discipline Network at: <http://www.glos.ac.uk/gdn>.

Developing Skills-based Criteria through the Disciplines: Case Studies of Good Practice in Geography

Jenkins, A. & Ward, A.

A collection of case studies that aims to demonstrate that generic Transferable Skills can be developed effectively through traditional disciplines. The case studies are drawn largely from one discipline, Geography, but their basic messages can be readily transferred to other disciplines. This volume includes 18 case studies covering a variety of examples such as use in fieldwork, placements, group projects and skills-based profiling.

Publisher: Staff and Educational Development Association (SEDA)

Date/Edition: 1995, SEDA Paper 89

Availability: Available free from the Geography Discipline Network (GDN) website at:
<http://www2.glos.ac.uk/gdn/seda/index.htm>.

Geography for the New Undergraduate (GNU)

Various authors

GNU was a project from round one of the Fund for the Development of Teaching and Learning (FDTL), funded by HEFCE. The project ran from 1996 to 1999. The project objective was to develop a first year undergraduate seminar programme to teach personal, interpersonal and transferable skills to first year undergraduates, within a geographical context. The embedding of these skills at an early level of undergraduate education aims to assist in the successful transition to undergraduate studies and encourage the development of independent learning strategies. The GNU website currently holds the seminar programme material, accompanying student and tutor notes, and skills and careers guidance, all available for free download.

Publisher: Liverpool Hope University

Date: 1999

Availability: All materials freely available from: <http://www.hope.ac.uk/gnu/>.

Study Skills for Geography Students: a Practical Guide

Kneale, P.

This book has been written for students to provide information about research and study skills in higher education. It includes chapters on e.g.: time management, using the library and electronic resources; how to construct an argument; presenting geographical information and much more. Each chapter includes background information and context, top tips, references and further reading.

Publisher: London, Arnold

Date: 2003

ISBN: 0340810319

The above items are just a few examples of the available resources covering key skills in both the GEES and generic disciplines. For more, visit:

The GEES SC Resource Database at: <http://www.gees.ac.uk/db/>
The SNAS database at: <http://www.heacademy.ac.uk/snasdatabase.asp>

Research into Student Learning (Pedagogic Research) Resource Examples

The idea of 'scholarship' in teaching, that is, "engagement with research into teaching and learning, critical reflection of practice and communication and dissemination about the practice of one's subject", (Healey, M. (1999)) is not new to the GEES community. Indeed, the scholarship of teaching could simply be said to be about approaching course-related teaching, learning and assessment with the same commitment as discipline-specific research: but the reality of increased pressures on staff has meant that this level of engagement with teaching is sometimes pushed to one side. There is now, however, an increased emphasis in HE, both in the UK and internationally, on the need for learning and teaching developments to be supported by evidence-based practice and there is an increasing growth in interest in developing the scholarship of teaching through pedagogic research. Those working in the GEES subject areas have extensive knowledge and experience of quantitative and/or qualitative research within their own discipline area, but many individuals may be much less familiar with qualitative and educational research methodologies and both the generic and subject-specific pedagogic research literature. Here we highlight a few GEES-related and cognate resources that may be useful to those new to pedagogic research.

Journal of Geography in Higher Education

Various authors

The Journal of Geography in Higher Education (JGHE) is a peer-reviewed UK-based publication with an international spread that provides a forum for "geographers and others, regardless of their specialisms, to discuss common educational interests, to present the results of educational research and to advocate new ideas". The JGHE covers both physical and human geography, with papers from Geoscientists and Environmental Scientists also in evidence. Editions (published three times a year) often have a theme, for example, international perspectives on learning and teaching, or education for sustainable development, following up-to-the minute issues in the disciplines.

Publisher: Carfax Publishing Ltd.

Online ISSN: 14661845

Availability: Personal, departmental or institutional subscription. All abstracts can be found at the Geography Discipline Network (GDN) website at: <http://www2.glos.ac.uk/gdn/jghe/index.htm>.

Developing the Scholarship of Teaching Geography in Higher Education

Healey, M.

This article discusses what is involved and/or needed in the further development of the scholarship of teaching within geography. The author examines the issues involved, including the status of teaching, the complementary nature of teaching and research, the role of discipline networks, the standing of discipline-based pedagogic research and the application of scholarship in teaching. Implications at institutional, departmental and individual level are considered.

Publisher: Journal of Higher Education Research and Development, Taylor & Francis Group

Date/Edition: 2000, 19(2), pp.169-189

Availability: Available for free download from the Geography Discipline Network (GDN) website at: <http://www2.glos.ac.uk/gdn/confpubl/boston.htm>.

Getting Started in Pedagogic Research in the Physical Sciences

Reid, N.

This Practice Guide provides an outline and discussion of a range of educational research methodologies and strategies, together with potential advantages and disadvantages for each method. Examples of good research in physical sciences education research literature are included. Although published by a different subject centre, the guide's contents are equally relevant to those in the GEES disciplines due to the nature of these strongly cognate subjects. Topics covered include: sources of evidence, using written tests and interviews, handling of data and interpretation of results.

Publisher: The Physical Sciences Subject Centre

Date: 2004

Availability: Available for free download from: http://www.heacademy.ac.uk/assets/ps/documents/practice_guides/practice_guides/ps0076_getting_sarted_in_pedagogic_research_in_the_physical_sciences_aug_2004.pdf.

BEE-j (Bioscience Education Electronic Journal)

Various authors

Established in 2003, the Bioscience Education Electronic journal (BEE-j) is an on-line, bi-annual electronic journal that publishes a range of articles on HE level biosciences education, including peer-reviewed research and practice papers. Its aims are "to promote, enhance and disseminate research, good practice and innovation in tertiary level teaching and learning within the biosciences disciplines". The Centre for Biosciences has a strong cognate link with the GEES subjects, covering a range of disciplines including soil science and ecology.

Publisher: The Subject Centre for Bioscience

Availability: Available for free download from the Centre for Bioscience website at: <http://www.bioscience.heacademy.ac.uk/journal/>.

Linking Teaching and Research and undertaking Pedagogic Research in Geography, Earth and Environmental Sciences

Various authors

This special edition of Planet, the journal from the GEES Subject Centre, covers two major issues in the GEES disciplines in HE at present: namely linking teaching and research and pedagogic research in the disciplines. The pedagogic research section of the journal brings together papers written as part of the GEES Subject Centre national programme of discipline-based pedagogic research focused around the common theme of fieldwork.

Publisher: The GEES Subject Centre

Date/Edition: 2003, Planet Special Edition 5

Availability: Available for free download from the GEES Subject Centre website as a PDF from: <http://www.gees.ac.uk/pubs/planet/index.htm#PSE5>.

The above items are just a few examples of the available resources covering pedagogic research in both the GEES and generic disciplines. For more, visit:

The GEES SC Resource Database at: <http://www.gees.ac.uk/db/>
The SNAS database at: <http://www.heacademy.ac.uk/snasdatabase.asp>

Education for Sustainable Development (ESD) Resource Examples

In response to growing concerns about climate change, energy resources and the planets' general state of health, the UK's HE Funding Councils have all developed strategies for Sustainable Development. HEFCE's vision, for example, is that within ten years the HE sector will be recognised as a major contributor to society's efforts to achieve sustainability. The aim is to encourage universities to give increased priority to producing "sustainability literate" graduates. While most if not all disciplines have something to contribute to Education for Sustainable Development (ESD), it is widely expected that the GEES subjects should occupy a leading position in this field. As a new or aspiring GEES lecturer, you need therefore to have some understanding of this field, not only as a part of your general professional awareness but also because you might be asked to deliver teaching in this area. The following resource examples will introduce you to the principles and main themes of ESD. The HE Academy report delivers useful facts and figures about ESD in UK's Higher Education while Stephen Sterling explains an ecological approach to ESD in Sustainable Education – Re-visioning Learning and Change. Our special edition of Planet concentrates on ESD and contains a variety of different expert articles from all around the world. The last two resources – the EAUC guide and the HEPS report - provide practical ideas and suggestions for sustainable practice in higher education.

Sustainable Development in Higher Education: Current Practice and Future Developments. Report for HEFCE

Dawe, G., Jucker, R. & Martin, S.

This report represents an interdisciplinary and integrated investigation into ESD and its implementation within Higher Education Institutions (HEIs) in the UK. As a result of a six-month investigation, the report illustrates how different subject disciplines within the higher education system are contributing to creating sustainability literate graduates. It identifies good practice in approaches to teaching and curriculum development; what barriers exist in embedding sustainable development in institutional teaching and learning strategies; as well as assessing the support required for widening and deepening the embedding process.

Publisher: The Higher Education Academy

Date: 2005

Availability: Available online at:

<http://www.heacademy.ac.uk/assets/York/documents/ourwork/tla/sustainability/sustdevinHEfinalreport.pdf>

Sustainable Education – Re-visioning Learning and change

Sterling, S.

This briefing by Stephen Sterling sets out to critique the prevailing educational paradigm from an ecological perspective and outlines an alternative concept. It attempts to outline a more democratic and ecological approach to the discourse and shows how sustainable education can lead to transformative education. Sterling also presents brief case studies of educational initiatives and institutions and suggests design strategies and measures for policy-makers and practitioners.

Publisher: Totnes, Green Books, Schumacher Society

Date: 2001

ISBN: 1870098994

Education for Sustainable Development (ESD): Ideas for learning and teaching in Geography, Earth and Environmental Sciences - Planet special edition 4

Various authors

The idea for this theme issue originates from a symposium held in Moscow in June 2002 where leading Russian and UK specialists came together to exchange ideas and good practice about ESD. The special edition provides the historical context to the debates and practice in ESD within GEES subjects in UK Higher Education and contains a variety of different articles, including an outline of the position of ESD in UK secondary education, a link to teacher training course improvement, greening the curriculum; review of initiatives undertaken since Rio, major programmes, i.e. Higher Education Partnership for Sustainability (HEPS), examples of ESD courses in the UK; and the educational value of practical environmental projects. A final set of papers is from overseas, showcasing case studies from Russia, Sweden and Australia, with additional ideas and alternative practice.

Publisher: The GEES Subject Centre

Date/Edition: 2002, Planet Special Edition 4

Availability: Available online at: <http://www.gees.ac.uk/pubs/planet/index.htm#PSE4>.

Biodiversity on Campus. An EAUC Practical Guide

Dixon, M., Webb, M., Cook, G. & Forster, J.

This practical guide encourages Further and Higher Education (FHE) institutions across the UK to take a fresh look at how biodiversity fits into their environmental management agenda. It focuses on finding ways of managing campuses for biodiversity and features useful sector case studies. This is a detailed 'how-to-do-it' guide, mainly aimed at estates and related departments but also useful to any member of staff at universities or colleges involved in biodiversity initiatives.

Publisher: The Environmental Association for Universities and Colleges

Date: 2007

Availability: Available online at: http://www.eauc.org.uk/file_uploads_bio/biog_pt1.pdf.

Communicating for Sustainability: Guidance for Higher Education Institutions

Buckland, H., Brookes, F., Johnston, A. & White, E.

This guide is part of the curriculum guide series produced by the Higher Education Partnership for Sustainability (HEPS). It is designed to show how to communicate about sustainable development, why communication is the ultimate tool to deliver it and it will give a clear idea of what sustainable development means for an institution. After looking at other sectors' strategies and which of these could be useful for higher education, the guide finishes with an accessible explanation of how to write a communications strategy.

Publisher: Higher Education Partnership for Sustainability (HEPS)

Date: 2004

Availability: Available online at: <http://www.forumforthefuture.org/node/716>.

The above items are just a few examples of the available resources covering education for sustainable development in both the generic and GEES disciplines. For more, visit:

The GEES SC Resource Database at: <http://www.gees.ac.uk/db/>
The SNAS database at: <http://www.heacademy.ac.uk/snasdatabase.asp>

Practical & Laboratory Work Resource Examples

Many authors have addressed the positive impact of practicals and laboratory work, such as developing practical skills and competence, the familiarisation with laboratory equipment, techniques and materials, developing data-recording and analysis skills, and integrating theory and practice. Practical work, both laboratory and in the field, is now seen as an essential part of a modern science education and is a key area within the GEES disciplines as students learn to apply skills and techniques to GEES related issues. Practical provide a form of learning that is 'active' or 'experiential' and they can improve students' understanding of the methods of scientific inquiry; develop student skills such as measurement, observation and reasoning; develop professional attitudes to safety and equipment; develop specialist techniques; bridge the gap between theory and practice; and break down barriers between students and staff.

Practical and Laboratory Work in Earth and Environmental Sciences: guide to good practice and helpful resources

Williams, I.

This Learning and Teaching guide aims to discuss and promote the value of practicals and laboratory work in the teaching of the Earth and Environmental Sciences at undergraduate level. It suggests ways to improve the quality of learning that practicals can provide, outlines new ideas and suggests some texts and links that may be useful. In addition, the guide provides and evaluates examples of current laboratory practical exercises in Environmental Sciences so that learning outcomes become explicit. A comprehensive resource section can be found at the end.

Publisher: The GEES Subject Centre

Date: 2006

Availability: Free hard copy available. Please contact the GEES Subject Centre at: info@gees.ac.uk. Also available as PDF for free download at: <http://www.gees.ac.uk/pubs/guides/eesguides.htm>.

V-Lab: A Virtual Laboratory and Fieldtrip Environment

Various authors

Phil Marston at the University of Aberdeen has developed an online Virtual Laboratory. This project is a development of web based environments designed to support learning and teaching of laboratory practicals and field visits, providing learning activities in a functionally realistic environment. The web page contains a customisable shell and tools which enable integration of tutorial materials with interactive content consisting of virtual simulations of experimental apparatus and procedures, data collection, environment visualisation, and data analysis. The V-Lab Geography fieldtrip is one of these virtual tutorials and is freely accessible at: <http://www.abdn.ac.uk/~clt011/geography/virtualfieldtrip/>.

Publisher: V-Lab, University of Aberdeen

Date: 02/2002 (last modified)

Availability: The virtual laboratory can be visited at: <http://www.abdn.ac.uk/~clt011/v-lab/>.

Practicals and Laboratory Work in Geography

Birnie, J. & Mason O'Connor, K.

This book is part of the Geography Discipline Network (GDN) series 'Good Teaching, Learning and Assessment Practices in Geography'. It discusses the purpose of practical work, with a review of research on the effectiveness of laboratory teaching in science; the role of postgraduates who support practical work; and alternatives for laboratory work. Transferable skills in practical teaching and learning are considered. Checklists to assist in analysing the purpose of practicals are provided. The Guide includes a set of thirteen case studies with ideas for practical and laboratory sessions in geography.

Publisher: Cheltenham, Geography Discipline Network (GDN)

Date: 1998

Availability: Available for cost from: <http://www2.glos.ac.uk/gdn/publ.htm>.

Laboratory work in Science Education: an Evaluation with Case Studies

This publication is one of the outputs of the programme for Science Education Enhancement and Development (SEED), an FDTL (Fund for the Development of Teaching and Learning) project funded by HEFCE. SEED's overall aim was to develop, document and disseminate good practice in Science teaching and learning. This guide aims to evaluate the purposes of laboratory work in science education, to identify significant factors influencing the provision of laboratory work, and to identify a number of case studies that illustrate appropriate approaches.

Publisher: SEED, University of Plymouth

Date: 1999

Availability: This resource is freely available for download from the GEES web page at: <http://gees.ac.uk/resources/hosted/seed/seed.htm>.

Able Student, Disabled Person: practical activities and disabled students

Jones, A.

This short article from Alan Jones at Nottingham Trent University was published in Planet. It describes some of the practical solutions that can be adopted to make laboratory work more accessible for students with disabilities.

Publisher: The GEES Subject Centre

Date/Edition: 2002, Planet Special Edition 3, pp.27-28

Availability: Freely available as PDF from the GEES Subject Centre web page at: Available at: <http://www.gees.ac.uk/pubs/planet/p6/aj.pdf>. For a hard copy, please contact: info@gees.ac.uk.

The above items are just a few examples of the available resources covering practicals and laboratory work in both the generic and GEES disciplines. For more, visit:

The GEES SC Resource Database at: <http://www.gees.ac.uk/db/>
The SNAS database at: <http://www.heacademy.ac.uk/snasdatabase.asp>

Enhancement Themes Resource Examples

The Enhancement Theme initiative has been introduced by the Scottish Higher Education Enhancement Committee (SHEEC). This initiative seeks to improve the student learning experience in Scottish higher education by developing and implementing specific themes. Each Enhancement Theme project aims to encourage staff and students to share current good practice and generate ideas for learning and teaching. There is a focus on new themes each year and the Enhancement Theme projects for 2008 are: First-Year Experience, Flexible Delivery, Integrative Assessment, and Research-Teaching Linkages. In past years, the topics of Assessment, Employability, and Responding to Student Needs were the focus of attention.

The following examples of Enhancement Themes have been included here as they provide a useful tool for enhancing the student learning experience in general, for all GEES institutions across the UK. In this section, we have focussed in particular on two themes which we have not mentioned within this resource pack before: The First-Year Experience and Responding to Student Needs.

In addition, the GEES Subject Centre is developing an Enhancement Theme resource pack to support the work of the Enhancement Theme initiative in Scotland. The pack contains a variety of different learning and teaching resources and will be released in autumn 2008. Please contact The GEES Subject Centre at: info@gees.ac.uk for more information about the Enhancement Theme Resource pack.

Approaches to Learning: a study of first year geography undergraduates

Maguire, S., Evans, S.E. & Dyas, L.

This paper reports the findings of a survey conducted to investigate how a cohort of geography undergraduates approach learning. The learning approaches they adopt and how their perceived confidence levels change after one year in higher education are discussed. The students were exposed to a geography-based skills-development programme which emphasised a deep approach to learning.

Publisher: Journal of Geography in Higher Education, Carfax Publishing Ltd.

Date/Edition: 2001, 25(1), pp95-109

Availability: Institutional or personal subscription

The Higher Education Academy First-Year experience project

Yorke, M. & Longden, B.

The Higher Education Academy First-Year experience project is based on first-year full-time undergraduate students in a number of contrasting institutions and consists of two phases. Phase one is a survey of first-year full-time students in a number of contrasting subject areas regarding their perceptions of their experience as students. Phase two reviews all those who are recorded as not continuing their studies in their original institutions, in order to ascertain their reasons for discontinuing. The outcomes of the project have been summarized in two reports by Mantz Yorke and Bernard Longden.

Publisher: The Higher Education Academy

Date: 2006

Availability: The project web page, including the two reports and the student questionnaire, are freely accessible at: <http://www.heacademy.ac.uk/ourwork/research/surveys/fye>

Responding to Student Needs - Student Evaluation and Feedback Toolkit

Gordon, G. (Ed.)

This book summarises the outcomes arising from the Responding to Student Needs enhancement theme and brings together into a single volume the reports from all four strands of the Student Needs in the First Year of Study project and from the Student Evaluation and Feedback project.

Publisher: The Quality Assurance Agency for Higher Education

Date: 2005

Availability: http://www.enhancementthemes.ac.uk/documents/studentneeds/Student_Needs_Full_Outcomes_FINAL29_6_05.pdf

Student Transition and Retention (STAR) Project

Various authors

The STAR project (Student Transition And Retention) is an FDTL4 funded project based at the University of Ulster. The project focuses on the identification, analysis, dissemination and uptake of good practice in supporting students during periods of rapid transition from one learning environment to another with the aim to increase student retention.

The project aims to address student needs at a variety of stages, from prior to entry and induction process to curriculum development and staff development. The web page provides a variety of resources, papers and case studies.

Publisher: Student Transition and Retention (STAR)

Date: 2005 (last updated)

Availability: All materials are freely available at the STAR project web page: <http://www.ulster.ac.uk/star/index.htm>

Student Enhanced Learning through Effective Feedback (SENLEF)

Various authors

The SENLEF project is a resource for practitioners wishing to improve their feedback practice or get some new ideas. The project team has explored feedback issues with Higher Education Institutions (HEIs) across Scotland. The SENLEF page provides collated case studies, a set of principles for good practice and a range of resources including a literature review, web links and workshop materials.

Publisher: Student Enhanced Learning through Effective Feedback (SENLEF)

Availability: The SENLEF page is hosted by The Higher Education Academy. All resources and materials are freely available at: <http://www.heacademy.ac.uk/ourwork/learning/assessment/senlef>.

The above items are just a few examples of the available resources covering two Enhancement Themes projects First-Year Experience and Responding to Student Needs in both the generic and GEES disciplines. For more, visit:

**The GEES SC Resource Database at: <http://www.gees.ac.uk/db/>
Enhancement Themes at: <http://www.enhancementthemes.ac.uk/default.asp>**