

www.skills4study.com

MACMILLAN STUDY SKILLS

TEACHING STUDY SKILLS & SUPPORTING LEARNING

STELLA COTTRELL

Teaching Study Skills and Supporting Learning

Macmillan Study Guides

A Handbook of Writing for Engineers (second edition) *Joan van Emden*
Effective Communication for Science and Technology *Joan van Emden*
How to Write Better Essays *Bryan Greetham*
Key Concepts in Politics *Andrew Heywood*
Linguistic Terms and Concepts *Geoffrey Finch*
Literary Terms and Criticism (second edition) *John Peck and Martin Coyle*
The Mature Student's Guide to Writing *Jean Rose*
The Postgraduate Research Handbook *Gina Wisker*
Practical Criticism *John Peck and Martin Coyle*
Research Using IT *Hilary Coombes*
The Student's Guide to Writing *John Peck and Martin Coyle*
The Study Skills Handbook *Stella Cottrell*
Studying Economics *Brian Atkinson and Susan Johns*
Studying History (second edition) *Jeremy Black and Donald MacRaild*
Studying Psychology *Andrew Stevenson*
Teaching Study Skills and Supporting Learning *Stella Cottrell*

How to Begin Studying English Literature (third edition) *Nicholas Marsh*
How to Study a Jane Austen Novel (second edition) *Vivien Jones*
How to Study Chaucer (second edition) *Rob Pope*
How to Study Foreign Languages *Marilyn Lewis*
How to Study an E. M. Forster Novel *Nigel Messenger*
How to Study a Thomas Hardy Novel *John Peck*
How to Study James Joyce *John Blades*
How to Study Linguistics *Geoffrey Finch*
How to Study Modern Poetry *Kenneth Pickering*
How to Study Modern Poetry *Tony Curtis*
How to Study a Novel (second edition) *John Peck*
How to Study a Poet (second edition) *John Peck*
How to Study a Renaissance Play *Chris Coles*
How to Study Romantic Poetry (second edition) *Paul O'Flinn*
How to Study a Shakespeare Play (second edition) *John Peck and Martin Coyle*
How to Study Television *Keith Selby and Ron Cowdery*

www.macmillanstudyguides.com

Teaching Study Skills and Supporting Learning

STELLA COTTRELL

© Stella Cottrell 2001, under exclusive licence
to Springer Nature Limited 2019

All rights reserved. No reproduction, copy or transmission of this
publication may be made without written permission.

No portion of this publication may be reproduced, copied or transmitted
save with written permission or in accordance with the provisions of the
Copyright, Designs and Patents Act 1988, or under the terms of any licence
permitting limited copying issued by the Copyright Licensing Agency,
Saffron House, 6–10 Kirby Street, London EC1N 8TS.

Any person who does any unauthorized act in relation to this publication
may be liable to criminal prosecution and civil claims for damages.

The author has asserted her right to be identified as the author of this
work in accordance with the Copyright, Designs and Patents Act 1988.

First published 2001 by
RED GLOBE PRESS

Red Globe Press in the UK is an imprint of Springer Nature Limited,
registered in England, company number 785998, of 4 Crinan Street,
London, N1 9XW.

Red Globe Press® is a registered trademark in the United States,
the United Kingdom, Europe and other countries.

ISBN 978–0–333–92124–1 ISBN 978–1–137–07094–4 (eBook)

This book is printed on paper suitable for recycling and made from fully
managed and sustained forest sources. Logging, pulping and manufacturing
processes are expected to conform to the environmental regulations
of the country of origin.

A catalogue record for this book is available from the British Library.

A catalog record for this book is available from the Library of Congress.

Contents

<i>Preface</i>	x	Orientation to higher education	72
<i>Acknowledgements</i>	xiii	Introduction to academic thinking	74
<i>List of Abbreviations</i>	xiv	Introduction to skills development	76
<i>Introduction</i>	xv	Using an Action Plan and portfolio	77
		Diagnostic work: identifying skills	
		and needs	78
		Diagnostic procedures	81
		Linking identification of need to	
		support	96
		Final comments	96
PART I LEARNING IN CONTEXT	1		
1 Skills into the curriculum	3	5 Integrating study skills into teaching	97
The changing agenda	3	The role of lecturers in promoting	
What do we mean by 'skills'?	9	learning skills	97
Institutional advantages of a 'skills		General teaching approaches which	
curriculum'	12	promote learning	98
Final comments	15	Developing students' skills through	
		teaching	109
2 Understanding the learner	16	Final comments	118
Theories of learning	16		
Inhibited and motivated learning	23	6 Writing: the burning issue	120
Student attitudes and approaches		Inspiring writing	120
which inhibit learning	29	Writing pluralities: writing across	
Widening participation	35	the curriculum	127
Final comments	38	Supporting students' writing: the	
		SPACE model	129
3 Supportive learning environments	40	Final comments	135
'At risk' students or 'at risk'		SPACE checklist: supporting student	
environments?	40	writing across the curriculum	136
Remedial or deficit models	41		
A learning development model	43	7 Study skills programmes	138
Key features of the learning		Objectives of study skills programmes	138
development model	45	Developmental approach	138
Location of support: dispersed		Academic content	140
responsibility for skills and learning		Relevance	140
enhancement	47	Elements of a study skills programme	141
Embedding support into systems and		Structured reflection for improving	
procedures	52	learning and performance	144
Final comments	63	Continuity and progression	144
Skills framework checklist	64	Consistency	145
		Structuring study skills sessions	145
4 Induction, orientation and the		Materials	146
identification of learning needs	66		
Induction as a process	66		
Introducing induction to students	67		
Features of the induction process	67		

Recording and monitoring development	147	PART II MENU: OUTLINES FOR STUDY SKILLS SESSIONS	189
Assessment	148		
Final comments	151	Introduction to Part II	191
Introductory books	152	Using the menu to design skills sessions	191
Structured reflection to improve learning and performance	153	<i>The Study Skills Handbook</i>	191
		Features of the menu section	192
8 Supporting individual students	160	Contents of menu sessions	192
Who needs additional or individual support?	160	Adapting the menu to suit you	193
'Needs' in relation to continuing development	161	SEEC/HECIW descriptors and the study skills menu	193
Needs evaluation	162		
Objectives	163	10 Induction: orientation to learning	195
Ground rules and responsibilities	163	Aims of the session	195
Establishing priorities	164	Learning outcomes	196
Forming a rapport	164	Activities:	196
Offering study advice and guidance	165	Group bonding; Expectations and responsibilities; Setting ground rules; Managing introduction information; Campus exploration; Introducing personal, professional and academic development; Skills and experience; Group project; Orientation to HE thinking; Originality and individuality; Ethics and values	
Working from strengths	165	Resource sheet	207
Case studies	166		
Final comments	172	11 Managing learning: attitudes and approaches to learning	208
		Students' difficulties: beliefs, attitudes and habits	208
9 Teaching to support learning: the reflective practitioner	173	How lecturers can help	209
What stimulated your own learning?	173	Aims of the session	210
Anxieties, challenges and opportunities	175	Learning outcomes	210
Inspiration	175	Tutor preparation	210
Teaching style	175	Activities:	211
Teaching strengths and weaknesses: self-evaluation	177	Icebreaker; Ground rules; Learning histories; Intelligence and learning; Developing as a reflective learner/practitioner; Optimising your learning; Creative, reflective, effective, active and motivated (CREAM) approaches; Learning styles; Self-appraisal of course work; Summing up	
Teaching strengths and weaknesses: peer evaluation	178	Resource sheet	214
The 'added value' you bring to your teaching	178		
Study skills requirements for your subject	179		
Skills profile for teaching study skills	180		
Skills profile for integrating study skills into teaching	185		
Drawing on your area of expertise: transferable skills	186		
Critical incident	187		
Drawing reflections together	187		
Action Plan	187		
Closing reflections	188		
Bibliography	188		

12 Managing learning: identifying skills and learning priorities	225	15 Developing thinking skills	255
Students' difficulties in evaluating skills	225	Students' difficulties with thinking skills	255
How lecturers can help	226	How lecturers can help	255
Aims of the session	226	Aims of the session	256
Learning outcomes	227	Learning outcomes	256
Tutor preparation	227	Tutor preparation	256
Activities:	228	Activities:	257
Icebreaker; What is a Skill?; Developing skills of reflection; Transferable skills; Study skills priorities; Subject-specific skills checklist; SWOT analysis on subject readiness; Action Plan and Position Paper		Icebreaker; Introduction; Similarities, connections, differences; Generating ideas and organising material; Analysis; Simplifying; Elements of problem-solving; Problem-solving; Follow on	
Resource sheet	231	Resource sheet	264
13 Working with others	240	16 Using lectures effectively	265
Students' difficulties in working with others	240	Students' difficulties with lectures	265
How lecturers can help	241	Why students take inadequate notes	265
Aims of the session	241	How lecturers can help	266
Learning outcomes	241	Tutor preparation	267
Tutor preparation	242	Aims of the session	268
Activities:	243	Learning outcomes	268
Icebreaker; Pooling ideas; Advantages of working in groups; Speaking and listening; Effective listening; Team work; Constructive criticism; Tools and skills; Successful groups and sabotaged groups		Activities:	268
Resource sheet	247	Icebreaker; Using lecture time effectively; What is the purpose of taking notes?; Listening for meaning; Variation on listening for meaning; Tips on note-making; Improving notes; Using videos; Employability links	
14 Organising and managing study	248	Resource sheet	271
Students' difficulties with organising and managing study	248	17 Reading for research	272
How lecturers can help	249	Students' difficulties with reading	272
Aims of the session	249	How lecturers can help	273
Learning outcomes	249	Aims of the session	273
Tutor preparation	250	Learning outcomes	274
Activities:	250	Tutor preparation	274
Icebreakers; SWOT analysis; Using existing skills in new areas; Group characteristics; Action Sets; Pulling it together; Organisational strategy		Activities:	275
Resource sheet	253	Icebreaker; 'Flick-through' exercise (1); Reading for meaning; Structured reading; 'Flick-through' exercise (2); Reading strategies for different purposes; Subject-specific reading demands; What makes reading difficult?; Tips for reading;	

Making notes when reading; Difficulties with note-making when reading; References, bibliographies and plagiarism; Book reviews; Searching for sources on the internet; Identifying a good source; Employability links		writing; Varieties of writing; Polar opposites; Developing a piece of writing; Referencing your work; Plagiarism; Assignment types; Writing for different audiences; Employability links	
Resource sheet	279	Resource sheet	298
<hr/>		<hr/>	
18 Writing skills I	280	21 Critical and analytical thinking skills	303
Students' difficulties with writing	280	Students' difficulties with critical and analytical thinking	303
How lecturers can help	280	How lecturers can help	304
Tutor preparation	281	Aims of the session	304
Aims of the session	281	Learning outcomes	304
Learning outcomes	282	Tutor preparation	305
Activities:	282	Activities:	305
Icebreaker; Writing anxieties; Getting into the flow; Developing an idea into writing; Support for writing; Clarity and ambiguity; Priorities; Close		Icebreaker; 'Falsely accused'; Critical and analytical reading; Analytical writing; Brainstorm difficulties; Alternative activities for less confident groups; Alternative activities for more confident groups; Employability links	
Resource sheet	285	Resource sheet	308
<hr/>		<hr/>	
19 Writing skills II	287	22 Seminars and oral presentations	311
Students' difficulties with writing assignments	287	Students' difficulties in seminars and oral presentations	311
How lecturers can help	287	How lecturers can help	312
Aims of the session	288	Tutor preparation	312
Learning outcomes	288	Aims of the session	313
Tutor preparation	288	Learning outcomes	313
Activities:	289	Activities:	313
Icebreaker; Marking assignments; Working with titles; Metaphor; Awareness of word limits; Working with words; Generating words; Structuring writing; Developing writing further; Advance preparation; Close		Icebreaker; Seminar difficulties; SWOT for seminar work; Sabotage and success; Seminar questions with advance discussion; Practice joint presentation; Debriefing on presentations; What have we learnt?; Follow-up work on seminars and presentations	
Resource sheet	293	Resource sheet	318
<hr/>		<hr/>	
20 Writing skills III	294	23 Memory	322
Students' difficulties and how lecturers can help	294	Students' difficulties with memory	322
Aims of the session	294	How lecturers can help	323
Learning outcomes	295	Aims of the session	323
Tutor preparation	295		
Activities:	295		
Icebreaker; Evaluating student			

Learning outcomes	323	discuss example answers;	
Tutor preparation	324	Practice sessions; Summary	
Activities:	324	Resource sheet	334
Icebreaker; The breadth of our memories; Linking information; Individual memory strengths; Stories; Encoding information; Personal strategies; Memory for subject discipline material; Best tip			
Resource sheet	327		
<hr/>			
24 Revision and exams	328	25 Drawing it together	335
Students' difficulties with revision and exams	328	Students' difficulties	335
How lecturers can help	329	How lecturers can help	335
Aims of the session	330	Aims of the session	336
Learning outcomes	330	Learning outcomes	336
Tutor preparation	330	Tutor preparation	336
Activities:	331	Activities:	337
Icebreaker; Audit: skills, knowledge and experience; Purpose and advantage of exams; How do lecturers mark exam answers?; Characteristics of exam answers; 'How could we completely mess up the exam?'; Writing groups; Memory strategies; Exam questions; Positive state of mind; Practice answers; Mark and		Icebreaker 'Where am I now?' and 'What is my next step?'; 'Take one strength . . .'; 'Take one weakness . . .'; Top strategies; The importance of reflective practice; Transferable skills and employability; Updated Position Paper	
		Resource sheet	339
		<hr/>	
		Appendix 1: Graduate skills and qualities	343
		Appendix 2: SEEC/HECIW level descriptors	344
		<i>References</i>	347
		<i>Index</i>	352

Preface

This book has arisen out of work undertaken with students over 20 years across a range of educational establishments. Despite the range in student age-groups, differences in educational background and variation in the type of institution, certain common themes have emerged. One such theme is the fragility of many students, whether high achievers or not, and the desperation of students to hide their doubt in their own abilities from lecturers. It is much easier, publicly, to blame lack of success on financial concerns, on the need to work or on having dependants than to admit to fear of failing, of not being good enough, of believing oneself 'too stupid' to succeed at higher education level. In order to meet the need for study skills support at the University of East London in the early 1990s, I produced a booklet of materials known as *Skills for Success*. One notable aspect of feedback on this was that students said it changed their views about academic study as an activity where you were either 'born to succeed' or 'doomed to fail'. All too often, they had been told to 'do better' but had not known how to do so nor believed it possible. The realisation that there were methods and attitudes that might improve study outcomes meant that struggling students could see some point in directing their energies at their academic work.

A second theme which emerges from in-depth work with several hundreds of students is that although method is important, there is not a single way of approaching study that will work for all. For that reason, alternative approaches are built into many activities in this book and in the student activities in *The Study Skills Handbook* (Cottrell, 1999). Moreover, strategy is not sufficient to achieve academic success. Self-belief is equally important. It has been extraordinary to note how much improvement students can make from even extremely limited input. It is not necessarily the particular method

used that is important so much as that students believe there are ways of improving and that if one strategy doesn't work for them, another might. Students have commented on how important it was to them that somebody, and especially lecturers, believed in them and took the trouble to tell them how to improve in ways that made sense. They also comment on how valuable it is to know that some difficulty with academic study is to be expected and that this is not a sign of failure or stupidity.

Skills for Success became the basis of *The Study Skills Handbook* published by Macmillan (now Palgrave). The *Handbook* was very carefully designed so as to be easy to use, and to address areas such as memory, critical thinking and skills transferability which have often been neglected in other study skills books. The *Handbook* also raises more complex issues about the nature of intelligence, academic study and personal approaches to learning in order to foster, in students, a more reflective approach to learning. The book has proved very popular amongst students, and a number of universities are now using it as their main study skills text.

Widening participation has placed study skills much higher on the agenda within higher education. Increasingly, lecturers are coming to realise the importance of embedding study skills within the curriculum and of teaching in ways that develop students' academic performance. Responsibility for study skills may be given to lecturers who have not been trained to teach at all, much less to teach higher level subjects to students who have struggled previously at more basic levels. There is very little training in skills development available for lecturers; there are few texts aimed at either lecturers or specialists on the teaching of study skills.

Skills for Success was originally accompanied by *Tutor Notes* to guide lecturers on how to make the most of study skills materials with students

and generally create conditions that might improve student learning. This book originally began as an extension of the *Tutor Notes*, as support material for lecturers who chose to use *The Study Skills Handbook*. Since then, it has expanded into a book in its own right. Whilst the *Handbook* is the natural complement to this book, *Teaching Study Skills and Supporting Learning*, this text has been designed so that lecturers can make use of its ideas and activities without using *The Study Skills Handbook* if they so wish.

Just as there are many ways to study, there is not one single way to teach study skills. This book does not aim to legislate on how study skills should be taught. Rather, it aims to assist busy lecturers to understand some of the issues, to put together programmes that incorporate study skills development, and to integrate a broader support for academic development into their general teaching. Although the book makes many suggestions, often drawn from a very wide range of contexts and inputs by others, it is hoped that these will be only the starting place for improved ideas by practitioners, a stimulus to reflection, and a basis from which lecturers can develop more supportive teaching strategies compatible with their own intakes.

Thanks are due to staff at both the University of East London and Birmingham University for piloting materials and approaches suggested in this book with their students and for the activities they contributed.

I would like to convey particular thanks to those who have made individual named contributions to the book, both Claire Dorer at Birmingham University for her piece on working with mature students, and Victor, a student at the University of East London, for his piece on using an engine analogy to develop academic writing. Heartfelt thanks is offered to the many unnamed students whose individual struggles have been the inspiration and backbone of this book. In addition, special thanks are due to the following staff at the University of East London: Hazel Cross, who was a rich source of ideas in the early stages of this book; Tony Wailey for ideas emanating from his work

on accrediting prior learning such as the use of the 'personal statement', and Robert Simpson for permission to adapt materials he used with staff on the Social Work Diploma and Cultural Studies Courses; Jonathon Leader and Sally Gotti for critiquing chapters when these were still in their early drafts; staff and students from Fashion and Design with Marketing for allowing me to adapt materials on student self-assessment, and Valerie Goodworth for her enthusiasm and insights on using Honey and Mumford's learning styles.

I would like to acknowledge the wide range and extremely valuable input I have received from staff and students in educational establishments where I have either taught, led training, undertaken the role of external examiner, or acted as a consultant. These include, especially, the colleagues and very special students to be found at the Universities of Luton and East London, but also those at the Universities of Strathclyde, Central Lancashire, North London, Paisley, Brighton, Kent at Canterbury, the London School of Economics, Somerville College, Oxford, Glasgow School of Art, the Robert Gordon University, Oxford Brookes, Anglia Polytechnic University, Napier University, the Surrey Institute of Art, Roehampton Institute, the Workers' Education Association (Oxford), Brixton College (Start-up), Hackney Community College, Waltham Forest College and Peers School, Oxford.

I would like to express my appreciation to staff at Palgrave who have assisted in getting this book off the ground: Margaret Bartley who encouraged me to undertake the project in the first place; Suzannah Tipple who took over the production of the book; Houria Alavi, the Senior Editor; Valery Rose, the copy-editor; Sanphy Thomas, Felicity Noble and all those who worked so hard behind the scenes to produce the final text. A special mention and warm thanks are owed to Kate Williams from Oxford Brookes University for her sound sense and very valuable contributions to both *The Study Skills Handbook* and this text; I consider myself very lucky that she read and advised on early drafts for both and, even more so, for the extreme

generosity and kindness with which she made suggestions for improvements.

Finally, I thank my partner for being a tower of strength, for suffering my endless redrafting

when we could have been out doing more exciting things, and for keeping me supplied with the mint Aeros essential to my learning style.

Stella Cottrell
University of Luton

Acknowledgements

Acknowledgements and thanks for permission to reproduce or adapt materials for this text go to Ralph Thomas and staff at Birmingham University (Selly Oak Campus) for the use of their induction activities; Claire Dorer at Birmingham University for her piece on working with mature students; Valerie Goodworth, Dawn Branigan and staff and students from the Fashion and Design with Marketing programme at the University of East London for allowing me to adapt materials on student self-assessment and their induction exercise; Robert Simpson and Tony Wailey for permission to adapt materials used by staff on

the Social Work Diploma and Cultural Studies Courses at the University of East London, including the idea of using Position Papers; the Southern England Education Consortium and the Higher Education Credit Initiative, Wales, for the SEEC/HECIW level descriptors in Appendix 2; TMP Worldwide Research for *Soft Skills: Employers' Desirability and Actual Incidence* (1998); 'Victor' from the University of East London, for his expertise metaphor.

Learning Style Inventory (LSI), by R. Dunn and K. Dunn, referred to in the text is available from Price Systems, Box 3067, Lawrence, KS 66044, USA.

List of Abbreviations

AP(E)L	Accreditation of Prior (Experience and) Learning
BTEC	Business and Technical Education Council
CPAS	centrally provided additional support
CPD	continuous professional development
CVCP	Committee of Vice-Chancellors and Principals
FE	further education
HE	higher education
HECIW	Higher Education Credit Initiative, Wales
HEI	higher education institutions
ILT	Institute for Learning and Teaching
LSQ	learning style questionnaire
MBTI	Myers–Briggs type indicator
NLP	neuro-linguistic programming
NVQ	National Vocational Qualification
PDP	personal development planning
PPAD	personal, professional and academic development
PPD	personal and professional development
QAA	Quality Assurance Agency
QCA	Qualifications and Curriculum Authority
SALS	specific and additional local support
SASSA	study aids and study strategies assessment
SEDA	Staff and Educational Development Association
SEEC	Southern England Education Consortium
SIT	support integrated into teaching
SpLDs	Specific learning difficulties
UEL	University of East London
VSI	video supplemental instruction

Introduction

The overall aim of this book is to assist staff in higher education to deliver study skills and learning support. It does so by focusing on the needs of the student from several perspectives. It looks at the importance of addressing the over-arching learning environment, whether at the level of the institution, the course, or individual teaching sessions. It offers suggestions for enhancing support structures and for creating opportunities for improving student performance at each of these levels. It is argued that support for learning cannot be centred solely in dedicated modules or specialist services, important though these are, but that all lecturers have a role to play in helping students to improve their own learning and performance. The book aims to provide support both for skills specialists and for those who consider themselves to be primarily 'subject' lecturers.

The book makes practical suggestions for action. In doing so, its aim is not to be prescriptive. As Birnbaum (1989) has illustrated, this rarely works in universities. Rather, the book suggests measures which can be adapted locally to suit the particular needs of different cohorts of students. At the same time, by being very specific about the details of activities, procedures and processes, it aims to make it easier for staff to grasp the nature of the student difficulties quickly and to offer practical support with the minimum of duplicated effort.

The book is in two parts. Part I focuses on the overall context in which skills development can best flourish. It argues for a developmental approach, where skills are not regarded as discrete or generic entities formed in the abstract, but are, rather, part of an overall set of outcomes which can be achieved when embedded in interactive and supportive learning environments. Although the book offers materials for use in skills modules, the emphasis is on skills being grounded in the concrete reality of

the course. Skills training works best when its relevance to assessment and to academic and professional success is made explicit and when it is well-anchored and contextualised within the subject specialism.

Throughout the book, it is argued that in the area of study skills, a fine line can be drawn between what should be a 'skill' on the part of the student, and what is the responsibility of the institution in orientating students and meeting them at their current level of knowledge, experience and performance. Chapter 2 identifies ways that students learn, and looks at the challenges facing learners in today's universities. Chapter 3 offers suggestions on ways that institutions can support all aspects of the student experience so that students have a greater chance of settling into higher education, staying there, and being successful in their studies. In particular, Chapter 4 looks at induction as a strategically important time for orientating students to the demands of higher education, setting ground rules, recognising mutual responsibilities and settling students into good study habits. It is also a key time for identifying students most at risk and targeting specific support.

Supportive learning environments mean that skills are required not only of students but of lecturers and all who come into contact with students. Lecturers need to be able to model and reinforce the skills they wish their students to demonstrate; skills sessions are not sufficient in order to develop skills to a high level. Skills need nurturing over time – and only lecturers will have sufficient access to students, as well as the necessary prestige, to complete the process of skills development over the whole time that the student is at the institution. To support the lecturer in developing these skills, this book offers dedicated chapters (see Chapters 5–7) aimed at the teaching lecturer. In addition, a

section at the beginning of each study skill session in Part II offers background to lecturers on how some student difficulties may arise, along with suggestions of ways that lecturers could alleviate these. Chapter 7 is aimed at staff who have particular responsibility for developing skills units. In addition, some lecturers with pastoral responsibilities may find Chapter 8, on supporting individual students, to be of help. Chapter 9 offers an opportunity for teaching staff to reflect upon their own practice as well as their training needs in relation to skills teaching.

Part II offers a range of activities designed to help students to develop study skills, including those that will help students to improve their own performance in the longer term. These activities are organised into study skills areas commonly recognised by practitioners, such as organisational skills, revision and exam strategies, and writing. There are also sections on memory, foundation thinking skills, critical and analytical thinking and orientation to learning. The introduction to Part II offers some guidance

on ways of making use of the activities suggested within the varied circumstances of different universities.

Material in the book is divided into that which can best be offered through:

- being incorporated into everyday teaching and learning (Part I and the opening sections of each of the sessions in Part II);
- study skills sessions (Part II);
- one-to-one support (Part I, Chapter 8).

However, these are very general categories and there are links made between all three aspects of skills teaching.

Developing study skills not only helps students to improve their learning and performance, it can also enrich their experience of university life. When students have a greater understanding of the learning process and of themselves as learners, they can gain the confidence to take control over their learning. With this confidence can come an increase in students' overall enjoyment of their study programme.

Part I

Learning in Context

1

Skills into the curriculum

The changing agenda

Since the early 1990s, there has been a dramatic change in the approach to skills development within higher education. Indeed, skills development is now high on the agenda for universities, colleges, schools, government and employers. Within the wider skills agenda, specific attention is beginning to focus on personal development planning and the main key skill associated with it, namely 'improving own learning and performance'. While personal planning and improving learning are not reducible to study skills, a reflective and developmental approach to study skills, such as is advocated by this book, is of central importance both to improving learning and, through that key skill, to creating a basis for other skills required of graduates.

The skills revolution has meant that there is an accompanying change in philosophy with respect to study skills. A decade ago, study skills was primarily conceptualised within a deficit model of the student: skills training meant 'remedial support'. Emphasis, now, is on how to map, deliver, teach and assess skills in terms of the general learning outcomes of a course. Concern focuses on issues such as how to raise the awareness of all students of the importance of skills development and how to present evidence, through progress files and transcripts, of the skills that students have acquired at univer-

sity. Skills are on the agenda, whether through 'Developing Learning' modules as at Nottingham (Hand *et al.*, 2000), integrated into the curriculum as at Luton, Kent and Portsmouth, or through local projects such as the 'Writing Workshops in Scottish History' at the University of Edinburgh or 'Group Skills Projects in Geography' at St Andrews (Hounsell *et al.*, 1996). In turn, this raises questions about where universities and colleges will find the expertise to meet the requirements of the new skills agenda. At present very few courses or materials exist to train and support lecturers in taking forward the new agenda.

The pressure for developing students' skills comes from many quarters: from government, from employers, from the inherent demands of widening participation, from teaching staff taking a more reflective look at what universities do and what they want graduates to achieve, and from a growing recognition that the information revolution is changing what is needed from both students and lecturers. University funding is likely to become tied, at least in part, to the ways institutions can indicate how the skills agenda, and especially aspects related to employment, are being met.

Traditionally, the main objection to addressing skills through the curriculum was that there would not be enough time to cover subject content. However, there is a growing acknowl-

edgement that, given the enormous growth in research and academic publications, it is a vain hope to expect courses, much less students, to cover more than a fraction of possible course material and for students to understand what they have learnt. Indeed, there is research to suggest that 'excessive amounts of material in the curriculum' (Ramsden, 1992) or 'a heavy workload' (Gibbs, 1992) push students into adopting superficial or 'surface' approaches to learning. An HMI report (1989) linked over-dependence on information delivery (usually by formal lecture) with students adopting a rote-learning approach; it argued that students did not develop a range of skills appropriate to higher education nor approaches that led to understanding and application of what was learnt. In other words, 'coverage' did not ensure learning.

There is now an increased, and growing, recognition that it makes sense to ensure that students are trained in process (or study) skills which give them the foundation and the confidence to direct their own learning. This is partly a question of skills training and partly a question of developing a culture of on-going professional development: students need to leave university with a keen awareness that their education has not ended. It is more useful, long term, to train students to be self-managers of the learning process, able to direct themselves around the subject, recognising gaps and with the capability of updating their knowledge once they leave university rather than overloading courses with material. Using a variety of teaching and assessment methods can increase student skills without necessarily detracting from subject coverage. There is much to be gained from moving away from what Freire (1974) called the 'banking concept' of education where education 'becomes an act of depositing, in which the students are the depositories and the teacher is the depositor'. Instead, as lecturers, we can assist our students to learn effectively, creatively and reflectively – in effect, to teach themselves. All students can benefit from addressing how they learn, not least because learning is a lifelong activity, irrespec-

tive of whether it takes place on or off campus. Hence the importance given by Dearing (1997) to 'learning to learn' as a key skill for all students.

The benefits of a skills curriculum

Increasing skills through the curriculum brings benefits for everyone. Students gain because they have a better idea of what is required of them and how to deliver it. The overall student experience is improved through the relief of some of the unnecessary stress which occurs when students are not sure how to improve performance. By the time they leave university, students will have a greater sense of the wider learning they have achieved at university, over and above subject content. They should have a greater sense of what it is to be competent, skilled, and able to transfer knowledge and experiences from one context to another; they should be more self-aware and confident about taking their place in the professional world.

The experience of the teaching staff can also be improved. When their students are trained to be more responsible for their learning, capable of applying problem-solving strategies to learning contexts, of using each other as resources, then there should be a reduction in their dependence on the lecturer as the source of all help. Moreover, lecturers can take pleasure in seeing a greater number of their students succeeding with better grades. Learning environments which promote skills and personal development tend to be more invigorating and enjoyable than traditional podium-led teaching contexts. Such environments can take the pressure off the lecturers to be sole 'deliverer', giving a more active role to students; this also offers lecturers a more rounded sense of their students. Employers benefit from receiving graduates who are more aware of what they have to offer to employers and who are able to apply academic skills to a wider range of contexts. Higher education institutions gain because, if students are trained to succeed, retention rates are improved, with the financial gains this brings.

Developing independent, self-reliant learners

The emphasis within current pedagogical thought is on increasing students' active participation within the learning process in order to foster independence and autonomy. This is partly a response to demands from employers for greater self-reliance from new employees. The former Employment Department funded six projects in 1994–6 to explore how autonomy could be developed within higher education, arguing that individual autonomy was a requirement of successful survival in modern society (McNair, 1996.) It is also a necessary development if students are to succeed in HE with reduced staff to student ratios.

However, students are not always ready, at entrance, to take on autonomous roles. Little (1991) suggests that students, far from being naturally independent, need to be trained in a 'capacity for detachment, critical reflection, decision-making and independent action'. Moreover, students from different ethnic backgrounds may have different expectations of formal teaching structures and become demotivated if these are removed precipitously (Press, 1996). From her experiences of developing autonomy in language learners, Hurd (1999) cautions a need for 'careful preparation of learners and teachers before any degree of autonomous learning can be successfully implemented'. Perry's research with American students (1970) revealed how long it can take even for 'elite' students to develop from 'absolutist', 'authority-seeking' attitudes towards more relativist and then 'personally committed' positions. Students need to be guided towards autonomy as part of their skills development (Cottrell, 2000).

Fazey (1996) suggests that student autonomy cannot be discussed without reference to skills development. Conversely, guiding students towards autonomy can help them to identify their skills requirements. She identifies four sets of skills needed in this regard: academic skills, personal management skills and self-awareness, which bring us back to the kind of skills agenda recommended by Dearing. In addition, she adds

'metacognitive' skills. She cites work by McCombs and Marzano (1990) who argue that students need training to recognise the link between themselves, 'the "I" component of the self', in order to realise a sense of personal control over learning activities. For this, opportunities are needed within the curriculum and through academic guidance for reflection, planning and self-evaluation.

The challenge of widening participation

'Widening participation' does not simply bring *more* students into HE but, rather, attracts *different* types of students. Lifelong learning initiatives attract students of more varied ages and from work-based settings. Governmental emphasis on increasing the number of school-leavers in HE means that students whose learning styles and current level of performance would previously have been a barrier to entering HE, are now finding the doors of HE opened to them. Many of these are students who will not succeed if conventional ways of delivering and assessing the HE curriculum are continued unchanged. Universities are slowly realising that it is not simply enough to open the doors: what goes on behind the doors has to change to accommodate new types of student intake.

Changing part changes the whole. Lewin (1952), for example, argued that when change is introduced into part of a social system, the effects on the whole system need to be considered in order for that change to become successfully established. One effect of the change in student intake is that work which was previously considered remedial and supplementary is now entering the mainstream as an essential part of the curriculum, of benefit in its own right. The notion of 'learning support' has broadened to encompass learning development in its widest sense. Wolfendale (1996), for example, argues:

Learning Support recognises that students have differential learning needs, study at different rates and paces, and manifest a myriad of learning styles. Such an ideology does not

have to compromise traditional conceptions of subject or discipline learning. Rather, it promotes and enhances the idea of striving to achieve excellence.

Although the success of students without traditional qualifications shows that such students can succeed in HE, and indeed enhance the overall university experience for other students, other students struggle and even fail unnecessarily. There are many and complex reasons for student non-completion, but amongst these is the evident mismatch between the skills, habits and attributes which universities have traditionally required at entrance, still regarded as desirable, and actual student performance levels at entry. Many students are inadequately prepared for university life and study. In other cases, departmental views of what teaching or learning might be are too narrowly conceived: the do not take into account the very different strengths of students who may not have succeeded academically in the past.

Universities set demands which students, especially those from 'widening participation' backgrounds, can find very difficult to meet without initial assistance. If universities wish to retain their students and improve their achievement, then they need to adapt to the performance levels of students at the point of entry, rather than to a notional view of what a new student 'ought to' be able to do. Either the curriculum has to change in order to orientate and train students so they can succeed, or a foundation or gateway course is needed to provide that orientation. This book argues that, whichever route is taken, skills development needs to be subject-specific; this necessarily requires the involvement and support of subject specialists. Chapter 2 argues that skills training needs to be embedded within, and delivered as part of, the curriculum, integrated with other course material. In this way, students can see its concrete relevance to their studies. It also increases the likelihood of those who most need skills training being able to access it: they are often those with the least disposable time for attending additional support. Moreover, fieldwork on

employability skills (CVCP, 1998) has shown that skills programmes are most successful where training is embedded within the academic subject curriculum rather than through discrete modules.

The development of skills curricula impacts upon teaching, assessment, course design and, indeed, almost every aspect of the student experience. It increases pressure for change. In the past, university teaching could sometimes be characterised by a 'sink or swim' stance, assuming that those who did not succeed somehow did not deserve to do so. Universities were able to rely on highly motivated, hand-picked students, skilled in the art of university learning even before they arrived at university. Those students were likely to succeed irrespective of the strengths or failings of the teaching they received. There was little incentive, much less training, for effective teaching

One of the benefits of widening participation is that it encourages, if not forces, universities to become more reflective about what they do and why. Where academic staff could send struggling students 'away' for support from specialist units, the trend now is towards all lecturers being taught to teach, and to teach in such a way that students who would have struggled are much less likely to need 'additional' help. In 1991, The Committee of Vice-Chancellors and Principals (CVCP), in a bid to elevate university teaching, issued a Green Paper proposing criteria to identify quality in teaching. Since then, many universities have developed SEDA-accredited postgraduate certificates in teaching learning in higher education, whilst the establishment of the Institute for Learning and Teaching (ILT) has gone some way to raise the importance of professional development for academics. Courses for academic staff on 'embedding skills' are already being made available and, although such training is still embryonic, this trend is likely to increase. Changes in the student body go hand in hand with the need for different kinds of teaching and with an increased emphasis on skills development – including study skills.

Employability versus academic skills?

One of the main incentives for bringing skills into the curriculum is the growing emphasis on graduate employability. The issue of employability has been creeping up the HE agenda since the late 1980s. The Enterprise in Higher Education initiative (1987–92) was intended to encourage the development of student-centred learning from a skills perspective and to bridge the gap between the world of work and that of higher education. In particular, it aimed to address employers' criticisms that graduates were ill-equipped for employment. A range of initiatives have developed from that project, including piloting Records of Achievement (Fenwick *et al.*, 1992), self-directed learning (Hammond and Collins, 1991) and the development of skills materials including early versions of materials that formed the basis of *The Study Skills Handbook* (Cottrell, 1999), and the staff training materials from which this book has developed. In 1996, a report from the Committee of Vice-Chancellors and Principals endorsed the employability agenda when it stated that 'it is one of higher education's purposes to prepare students well for working life'.

Employability skills are sometimes seen as being in conflict with the aims and objectives of a university. However, the differences between skills required for academic study and those desired by employers are often overstated. TMP Worldwide Research (1998) identified skills desired by employers. The three most desired skills were oral communication, team working and listening. The second cluster of skills employers required included written communication, problem solving, relationship development, the ability to adapt communication style, time management and the ability to share knowledge with others. These are all skills which are of benefit from an academic perspective as well as that of employment. The actual incidence of such skills, as perceived by employers, fell far below the levels required, despite the employability initiatives described above. Even skills in written and oral communication, which headed the incidence list, were thought hard to find in graduates.

A CVCP Report, *Skills Development in Higher Education* (1998), brings home the relation between skills required for both academic and employment purposes. The first of four skills categories identified by the Report was 'traditional intellectual skills', including items such as critical evaluation of evidence, problem solving, the ability to argue logically and to challenge assumptions. Its second category refers to 'key' skills such as communication, application of number, working with others, use of technology, and improving one's own performance, equally valid in employment and academic contexts. The same could be said of the third category which covered 'personal attributes' such as self-reliance, adaptability, creativity and 'nous'. A final category was 'knowledge about how institutions work'. Although this final category is clearly more employment-orientated than is usual on some university courses, it is still possible to integrate this within the main curriculum. Moreover, it is important to bear in mind that improved employment opportunities feature very highly in surveys of students' reasons for pursuing higher education (Glasner, 2000).

Of these four categories listed in the CVCP 1998 Short Report, the first three would be as useful to students for their studies as for employment. There are good pedagogical reasons for encouraging students to learn through co-operation with others, to develop self-management skills, to develop problem-solving strategies and information management skills. Employers value such skills, as well as those such as critical thinking, analysis of data, and written and oral communication skills. Both lecturers and employers have an interest in students being able to be self-reliant, able to manage projects, write well, meet deadlines and use information technology (IT). In other words, the skills and attributes students acquire in academic study are often transferable to the workplace, provided that there is supportive intervention to help students to articulate their learning in the language of alternative contexts, such as for higher academic study or employment.

It is worth noting that the employability skills listed by the TMP and CVCP reports include many skills that require personal interaction with others. This is one area where 'residential' universities have an advantage over e-universities. Courses which deliver information primarily through passive and receptive means (large lectures, note-making, essays and exams) may face increasing competition from e-universities who are likely to package informational courses more effectively and conveniently. It is, therefore, in the interests of residential universities to make the most of the benefits of working with others as a value-added component on their courses. Learning through interaction over time is much harder to deliver through virtual courses, even through an energetic electronic debating forum.

Key skills are now being offered as courses at some universities and have already been built into a number of university courses. For example, the Graduate Skills Programme at the University of Luton was elaborated with local employers (Collop *et al.*, 1998) and is offered as a post-exit work-based learning programme. In addition, all Luton students are now offered a range of academic and employability skills, based on SEEC/HECIW descriptors and integrated into the curriculum. In other words, universities can address academic skills and a significant part of the employability agenda simultaneously. Similar moves have been taken at Portsmouth (Glasner, 2000), and universities all over Britain are engaged in mapping courses against the SEEC descriptors, QCA key skills and similar frameworks, as well as against QAA benchmark skills. Imaginative curriculum design can also incorporate careers research and career planning as assessed project work or discrete modules within most programmes of study. A focus on skills development can operate to the benefit of both academic standards and student employability.

Personal, professional and academic development

Through studying for a degree, students develop not only academically, but also increase their chances of moving into a professional career and to develop, or mature, personal qualities and attributes. However, students are not always aware of what they have achieved beyond the content of their subject disciplines; they may not be able to articulate their broader learning in terms of skills and personal qualities, especially when competing with other graduates for work.

To help address this, the Quality Assurance Agency for Higher Education (2000) recommends that personal development planning (PDP) be built into provision for students over the next few years. It is expected that the progress file will pay particular attention to employability skills. The minimum expectations are that:

- institutional promotional materials should indicate how skills and attitudes that underlie Personal Development Planning are promoted;
- at the start of an HE programme, students will be introduced to the opportunities for PDP within their programme;
- students will be provided with opportunities for PDP at each stage of their programme;
- the rationale for PDP at different stages of a programme will be explained for the benefit of students.

It is useful to introduce this concept of personal development to students early in their time at university, especially if a more integrated approach to skills development is used. It can help students to make more sense of interactive teaching techniques and to value tasks such as oral presentation, which can be very daunting initially. It also places skills development within an adult, and therefore more acceptable, context. Success in personal development planning for most students is likely to be heavily dependent on their abilities in the key skills of improving their own learning and performance.

What do we mean by 'skills'?

'To be skilled is to be able to perform a learned activity well and at will' (Cottrell, 1999). Skill is associated with performance, with a way of using knowledge and experience in action. Argyris and Schon (1974), for example, describe skills as 'dimensions of the ability to behave effectively in situations of action'. Levels of ability are implicit within the idea of a skill: a skill can be more or less accomplished. There is also an element of control: a skilled performance does not arise by chance, by mere fluke, but through an act of will, by an application of previous knowledge and experience. As a result, there can be a reasonable expectation that a roughly equivalent performance could be repeated. Skills are sensitive to practice and strategy, and improve when there is time for rehearsal: skills refer to 'a quality of performance which is developed through practice, training or experience' (Starkes and Allard, 1993). However, in order to fine-tune a skill, personal qualities are also required, including motivation, commitment, awareness of what is required, perseverance and the ability to manage set-backs.

The boundaries of 'skill' merge with those of personal attributes. They also merge with those of knowledge: skill cannot be divorced from experience and context. This is especially the case with academic or 'study' skills. In some ways, 'skills' is a misnomer, an easy point of reference rather than an accurate description. Study skills development cannot be divorced from other aspects of a student's learning experience, including the subject discipline's knowledge base. Sometimes, a false antimony is erected between 'knowledge' and 'skills', arising from fears that skills development will undermine the 'knowledge' requirements. However, as Bruner (1966) argued, 'Knowing is a process, not a product.' Knowledge is not an end-product, a discrete set of information that passes from one head or text into another. Rather, it is intrinsically linked to processing of information, to 'making sense', developing understanding at increasingly sophisticated levels, bringing

attention to certain kinds of information dependent on the requirements of the context, panning out and homing in at appropriate levels of detail. To be knowledgeable within a subject discipline goes hand in hand with skills such as recognition of relevance, critical ability, application of data to specific problems, making decisions, and being able to communicate what is known to other people. In other words, study skills development is not an alternative to the knowledge base but a way of enhancing learning potential so that the knowledge is more accessible and better understood.

Terminology

The literature on skills uses a plethora of different terminology which can be confusing: core skills, transferable skills, key skills, study skills, learning skills, employability skills, lifelong learning skills, process skills and many others. There is no shortage of skills taxonomies. However, it is easy to be diverted by what are usually minor differences between lists. Some sub-skills are relevant to several different skills. For example, time management can be seen as a relevant component of problem solving, personal management, or even as a group skill. Taxonomies may opt to cite these sub-skills in different places. A list of graduate skills and qualities collated from a number of recent lists, is given below (Appendix 1). Despite this, the overall range of skills cited from one list to another shows a great deal of similarity, as will be shown below.

Study skills

There is a growing awareness that students' performance, even in higher education, can be improved through training in relevant academic skills. These are generally referred to as 'study skills'. Hurley (1994) describes study skills as 'key skills for all areas of education, including advanced study'. He argues that students benefit when these skills are taught explicitly. In other words, study skills need to be developed at each academic level: it should not be assumed that the skills a student brings from school, or even

from the first year of university, are sufficient to carry them through their degree. Skills such as personal management, task management, research and information management, working with others and critical thinking need to be fine-tuned and extended as students move from one level to another.

'Transferable' skills

Ball (1986) argued that employers needed not only academic skills but what he called 'transferable' skills. The term 'transferable skills' is generally used to refer to skills which are regarded as transferable either from one course to another, or between academic study and the world of work. Bridges (1993) refers to transferable skills as 'meta-skills' which enable people 'to select, adapt, adjust and apply' skills to different contexts and even cognitive domains. Skills usually cited in this category are those such as working with others, written communication, use of IT, and problem solving. There is some convergence evident in what were formerly referred to as 'transferable skills' and the more current terminology of 'key skills'.

It is manifestly evident that some skills which appear to be readily transferable from one context to another do not transfer as easily as might be expected. In practice, any skill is potentially 'transferable', and no skill is automatically transferable. For a skill to be transferable, there is usually a need for:

- at least three practice attempts in order to develop a more abstract schema of the activity, building upon concrete and situated experience; *and*
- the tutor or trainer to make explicit the way in which the skill might be applicable to more than one context.

Transferability is very much dependent on training in recognising cross-application. A good training in problem solving could develop the meta-skills that would enable students to develop such recognition more independently. Chapter 8 suggests that 'transferability' may depend less on apparent surface similarity in the skills (writing letters, writing essays, writing

business reports) than on the individual's perception of the task. For some individuals, apparently disparate skills (such as dressmaking and writing) may share an underlying problem-structure which allows for competence to be transferred more easily to a new context.

Core skills

Hurley (1994) uses 'core skills' to refer to cross-curricular skills such as language and numeracy, IT and personal effectiveness. It might be argued that there are subject-specific requirements, even in HE, in terms of numeracy, IT and language. If students need additional English, they are unlikely to have time to learn the whole English language but time devoted to key language patterns and phrasing used within the subject area could be of great assistance. This book does not focus on core skills.

Key skills

Hurley argues that key skills are 'relative to the level and programme of study, and are the essential learning skills and competences required for successful completion of study at that level'. Key skills include communication, number and study skills, but could be any skill needed for the programme, such as pattern cutting, use of specialist equipment, or higher level interpretative skills. The Qualifications and Curriculum Authority (QCA) identifies key skills as those 'needed to succeed in work, education and everyday life' (QCA, 2000). Six key skills were identified by the QCA in the 1980s in consultation with representatives from higher education and employers. These are:

- *Communication
- *Application of number
- *Information technology
- Working with others
- Improving own learning and performance
- Problem solving

Those skills marked with an asterisk are compulsory for all students on courses offering a General National Vocational Qualification, (GNVQ). These key skills, along with working with others and improving one's performance,

are required for modern apprenticeships and national traineeships. They enter into higher education curricula via Foundation Degrees, whose prospectus states that programmes should offer 'assessed or accredited key skills', covering 'communication, team working, problem solving, application of number, use of information technology and improving own learning and performance' (HEFCE, 2000). Some universities such, as Portsmouth, have adopted the QCA's six key skills categories for all students, not just those on Foundation Degrees. Whether these six key skills are sufficient key skills for HE graduate courses is open to question. The SEEC descriptors suggest some alternative skills which might be considered as 'key' to HE, such as 'creativity' and 'analysis'. It might also be argued that research and investigative skills, rather than being incorporated under problem solving, might require more individual focus and are, for HE, key skills in their own right. It could also be argued that, in the current climate of vocational education, 'preparation for the workplace' (or similar) could be regarded as a key skill in its own right. This could include such elements as career planning, knowledge of the labour market, understanding of how organisations work, and appropriate behaviours in the work place.

QAA Benchmark Skills

The Quality Assurance Agency (QAA) offers benchmarks for skills in different academic disciplines. Although a different selection of skills is identified for each subject discipline, and the vocabulary used to describe the skills varies slightly in each case, an underlying set of six skills emerges, which are generally in line with the 'key skills' identified above. In essence, the skills expected are those which require students to be able to manage themselves, their interactions with others, and their responsibility for the task in hand, as well as being able to communicate, use IT and manage information. Although the lists can be expanded to include many more headings, these six areas cover most of the skills required. What is meant by each

skill is likely to vary somewhat according to the subject discipline or professional area. The skills and sub-skills extrapolated from across the first 29 sets of draft benchmarks are roughly as follows:

(1) Improving own learning and performance (Self)

Taking responsibility for one's own learning and performance; reflecting on practice; learning to learn; applying learning to new contexts; applying learning theory; reflective professional practice; self-management and self-reliance.

(2) Working with others (Others)

Interactive group skills; project work; listening skills; working with the public or different client groups; constructive criticism; teamwork; working with colleagues and managing work placements; negotiation, consultation, interviewing, observing; committee skills; the ethics of interaction and intervention; managing emotion; assertiveness; being aware of the effect of one's own behaviour upon a group.

(3) Problem solving and task management (Task)

Time and space management; working to deadlines; organisational skills; investigative skills; research; recognising problem structures; applying knowledge and skills to new areas; trying out models; applying theory to real contexts.

(4) Communication

Writing in a range of styles for different audiences and purposes; oral presentation skills; listening skills; team presentation; using IT to aid presentation; communicating to a range of audiences using different media.

(5) Using IT

Basic applications (word-processing, spreadsheets, databases, graphics, email); using the internet; using course software; using statistics packages; using specialist IT for specific purposes.

(6) Information management/investigative skills

Being able to collect, manage, select and interpret data of various kinds including statistics and qualitative data; understanding the conventions of research; evaluating the quality of data; presenting data to others; the 'application of number'; using IT to enhance research skills and store information.

SEEC/HECIW Level Descriptors

The South England Education Consortium (SEEC) and the Higher Education Credit Initiative, Wales (HECIW) initiated a UK-wide collaboration in developing a standardised framework for defining levels and standards of modular units (see Appendix 2). The six headings described above under QAA benchmarking would apply primarily to the SEEC/HECIW category of 'Key transferable skills'. Most of the CVCP's second category of skills would also fit under the SEEC/HECIW 'Key transferable skills' heading. The framework is useful for course staff in mapping out learning outcomes and developmental skills so that students can chart their performance. Some institutions now require the learning outcomes of all courses to be written in terms of these SEEC/HECIW descriptors. To facilitate the work of courses that already use SEEC/HECIW descriptors, I have used SEEC/HECIW descriptors, mostly pitched at level 1, for each of the sessions and activities suggested in Part II (below).

Study skills within the skills agenda

It is important that essential study skills are included within newer skills agendas such as 'employability' and personal and professional development initiatives. The QAA benchmark skills and the SEEC/HECIW descriptors, discussed above, although very useful in advancing the skills agenda, do not necessarily address skills from the perspective of the student. For example, on courses where there is formal timed assessment (examinations), memory skills are

paramount for students, as are strategies for managing the revision and exam process itself. These barely feature in the QAA benchmarks or SEEC/HECIW descriptors. Students referred for study support often require training in the basic study skills, upon which higher academic skills can then be more fruitfully developed: investigative skills including course-specific reading strategies, thinking skills, task management and organisational skills. If students lack these skills, it is much more difficult for lecturers to teach them subjects at HE levels 2 and 3.

The skills identified and addressed through this book go a considerable way towards providing a solid basis upon which university courses can develop the skills agenda, both in terms of academic skills and 'employability' skills. The book does not cover all areas of the skills agenda. Numeracy, language, IT, careers planning and 'world of work' aspects of employability are specialisms in their own right. In terms of the skills agendas described above, this book addresses:

- (1) developing traditional intellectual skills (thinking skills; critical analytical thinking; memory; training towards assessment);
- (2) managing one's own learning and performance (Self);
- (3) working with others (Others);
- (4) problem solving and organisational skills (Task management);
- (5) communication skills (written and oral).

Institutional advantages of a 'skills curriculum'**Benefits to the university**

A 'skills curriculum' in this context is one which looks at its own skills requirements alongside the skills needs of its students and seeks to integrate skills development as seamlessly as possible within the overall course provision. This creates a supportive environment which adds to the quality of the students' experience. Indeed, QAA quality assurance procedures have, until

recently, employed 'Support and Guidance' as a separate category for checking universities' quality assurance mechanisms. The quality of support within a learning environment impacts upon other QAA quality categories, such as 'Progression and Achievement' and 'Teaching and Learning'. Although Support and Guidance is sometimes regarded as extrinsic to the course, as services offered by the Careers Advisory Service, Disability Co-ordinators, Student Services or other specialist departments, auditors are becoming increasingly aware of learning support as intrinsic to course delivery. The recent QAA Code of Practice on Disability (QAAHE, 1999), for example, which includes students with specific learning difficulties, argues that responsibility for support lies with all areas of the university, and should be integrated into teaching and curriculum design.

QAA auditors are becoming more skilled at identifying what support courses or departments offer to students, and how this dovetails with more specialist support. With the current emphasis on 'employability', for example, auditors are interested in how courses develop students' skills, rather than merely what the Careers Advisory Service offers in terms of advice. Similarly, the QAA Code of Practice on Disability states that provision for disability is seen as intrinsic to all delivery. Ideally, the support needs of students with disabilities should be met in ways that do not require students having to declare a disability or claim support on 'special' grounds or as a 'concession': the environment should be supportive of all of its students (Silver *et al.*, 1998). Chapters 3 to 5, below, look at the ways that institutions can structure support so that study skills are acquired in more seamless, integrated ways.

A supportive and professional learning environment can help to retain students. Yorke (1999) found that the culture of the course can have a decisive influence on whether students are retained. This culture can be imparted to the student from very early on, from pre-induction literature, from the induction process itself, and by comments made by lecturers on assignments

or in class. Assessment processes can be a factor in student loss. Traditionally, a minority of British school pupils have succeeded in the formal assessment procedures required at GCSE and at 'A' level. If students received low grades for school exams, they enter HE without the skills needed to pass exams well; it follows that they need training in order to make sense of what assessment processes require of them. Those who support students on an individual basis find that students, including those with traditional qualifications, may have little idea of what is expected, and are perfectly capable of succeeding once they have had training, practice and a boost to their confidence. Supportive environments can contribute to student retention, which, in turn, has a critical impact upon university finances, staff retention and projects which the university may wish to pursue.

Advantages of a skills curriculum to lecturers

There is no doubt that widening participation places heavier demands upon lecturers. There are many reasons for this, one of which is that many students have not yet learnt to manage their own learning and to be confident in their own decision making. Another is that students have weak internal schema of what HE is about, and sometimes little idea of what they are expected to do. For example, school and college students may be used to teachers telling them to open their books on a certain page and to turn to a particular paragraph. It is not unusual for students to then enter HE still expecting 'someone' to tell them when to read. This is often given as an explanation when students are asked why they did not read course handbooks or essential information: they are merely used to others telling them when and what to read.

A lecturer at Birmingham University described how she had prepared materials which she handed out at a pre-course introductory day, outlining how students should prepare for the course. At the end of the session, over half the new entrants left without it. Lecturers describe the increased 'nannying' that is

required of them. It can seem as if students are incapable of organising themselves and must accost staff for information which is quite clearly laid out in course handbooks. Student inability to meet deadlines means that lecturers have to sit through long explanations and life histories as students barter for mitigating circumstances or extra time. Panic about deadlines or exams can also bring students running to the lecturer's door, asking for additional help.

Students often lack basic study skills so that they are ill-prepared for learning the more specialised skills required of them as they move through different levels. This impedes understanding, slows down mental processing of new material, and complicates the teaching of more complex material. Excessive, and often unnecessary, questioning during class-time can mean lecturers cannot cover the material they had set for a session. Teaching staff benefit from the introduction of skills such as self-management, written communication, assessment training, basic critical thinking skills and foundation research skills into the curriculum. If many students lack the requisite skills, it is better that training is built into their programme, rather than each student chasing lecturers for additional support. Lecturers also have their part to play in modelling, rehearsing and reinforcing the skills and behaviours they wish to see in their students. Skills training along with supportive teaching strategies can mean that lecturers are under less pressure from students. It also means that students are better prepared when they enter higher years or levels, to build towards more specialised skills required by the discipline.

The importance of lecturers to study skills development

The lecturer's attitude to, and comments about, study skills are key in this

Lecturers have a central role to play in developing students' skills. Students take study skills much more seriously when their lecturers indicate that they also consider them important.

Moreover, students who need additional learning support are often terrified that their lecturers will think they are not already perfect students. It is very common for students to believe that if their lecturers knew they were struggling, they would allocate lower marks. Whether this is the case or not, it is a commonly held belief. Students can feel that they must appear to have no problems at all, and that a brave front will, in itself, bring them higher marks. Lecturers can reassure students that this is not the case, and can also frame skills development and learning support in a positive way, bringing out the general importance for all learners of identifying and addressing areas for improvement. This is in line with the approach identified by Wolfendale above (1996) where learning development is part of a more general encouragement for 'striving after excellence'.

Lecturers make study skills real and pertinent

Many students need lecturers to provide a bridge between the material presented in a study skills guide (or a generic or introductory study skills unit) and the tasks they must undertake on a day-by-day basis for their chosen subjects. As has been shown with other types of problem solving, students cannot necessarily see the connection between the information in a book and the particular task before them, or even between similar types of task, unless somebody helps them to make the connection (Butterworth, 1992; Reed *et al.*, 1985.) Simply handing study skills materials out at the beginning of the year does not necessarily do the trick of helping students to learn how to learn.

Although study skills units and drop-ins help many students, it is important to bear in mind that the time a student spends on a study skills unit or at drop-in sessions is a very small percentage of their time on the course. As with any other learning, the student may forget what they learnt on the unit soon after they leave it, unless that information is reinforced by others. Lecturers are ideally placed to make study skills materials relevant to the particular subject, through the way they teach, in the way they

mark and give feedback, in modelling good practice, in the language they use, and the attitudes they reveal.

Teaching strategies create opportunities for skills development

It is the lecturer who provides opportunities for discussion, interactive learning, problem solving, student participation and other strategies that enable a wide range of skills to develop. Conservative teaching styles may mean that students leave with a very narrow set of skills and very little idea of how to apply them across a range of contexts.

Willcoxson (1988) found that lecturers' method and style is influenced by whether they see learning as 'the transmission of knowledge' or 'the facilitation of learning'. Students may also enter HE with the notion that teaching is something that is 'done to them' rather than something which requires their active participation. Students need to feel confident that lecturers can guide them to learn rather than simply feed them with facts and answers. Research by Gibbs and others (1992) suggests that students take strategic approaches to learning, depending on how the course is structured and assessed. They are unlikely to see the value of independent and interactive approaches to learning if the teaching and

assessment does not also reinforce a student-centred approach.

Final comments

University departments and subject areas will need to identify their own particular ways of facing the various challenges of widening participation, inclusiveness, employability and student achievement. This book argues the case for a different kind of supportive learning environments than has been traditional in higher education. It emphasises that support is not simply a question of 'bolt-on' additional help by experts from outside the main subject discipline, but is an ethos which needs to permeate an institution, from the level of policy, strategy and curriculum design through to that of individual staff responses to students. The rise of interest in skills, both academic and professional, is a useful vehicle for increasing the competence of all students and for reducing the need for remedial support. In an era of widening participation, where there are concerns for student retention and employability and where there is a growing emphasis on improved teacher training, a focus on skills development is one way of meeting several important aspects of the higher education agenda.

2

Understanding the learner

In attempting to enhance the student learning experience and improve performance, guidance can be drawn from theories of learning, from adult students' own accounts of their learning and from the experiences of lecturers. This chapter opens with an exploration of learning theories that throw light upon adult learning, such as constructivism, embedded learning and equilibration theory. Particular emphasis is given to ways that learning and performance may be either 'inhibited' (thus preventing students from achieving their potential) or 'motivated' (so as to take students to the 'take-off' stage of engaged, independent learning). Students' attitudes and approaches to higher education study can be key factors in successful learning and may act as either inhibitors or motivators. This chapter offers a theoretical and contextual background to the strategies suggested later in the book, with an emphasis on the implications for successful teaching and learning in an era of widening participation.

Theories of learning

Learning is a natural process. Our brains are set up to learn. Billions of neurons develop networks to help us to encode information for memory, to transmit information from one part of the brain to another, and to form associations

between new and known material. There are also innumerable ways to learn: by listening, by watching others, through imitation, by day-dreaming, by taking small steps or through an inspired leap, by practice, by thinking through the relationship between two different problems, and so on. We have extraordinary internal resources. In other words, learning could be, perhaps should be, easy: our most intense learning is achieved in the first few years, long before we have any formal education. For very young children, learning is easy and generally fun, and yet adults can find 'learning' to be both difficult and threatening. Nonetheless, even struggling learners can find that they are able to improve performance when the conditions of learning are changed in some way, by altering aspects such as the learning environment, the wording of the task, the strategy selected, or attitude towards the task.

Most of the best researched theories of learning are based on studies of children. Nonetheless, these are also instructive in understanding the learning of adults, not only because these theories have shaped the development of adults studying in universities today but also because, as is manifest when observing students, adults often regress to childlike states when they enter a taught session. It is, therefore, reasonable for us to ask what happens to inhibit the open, receptive and easy learning of

young children so that we and our students, as adults, can find it difficult to learn? Why is it that sometimes we cannot take in new information or feel that it is impossible for us to learn new ways? Much of the research that contributed to the formulation of theories of learning focused on learning difficulty. The teaching and learning strategies which derived from such research have generally had a wider relevance and applicability, and can help us in supporting adult students. This chapter looks at some of the main theories of learning, their relevance to adult learners and some of the approaches that adult students bring to their studies which can lead to underperformance, withdrawal or failure. This chapter and those that follow identify teaching and learning strategies that can be adopted to retain students, improve performance and enhance the overall learning experience. In particular, this chapter draws out how theory can inform delivery of study skills and learning support so that there is a greater chance of a successful outcome.

Constructivism: internal schema

Of the different models of learning, the most influential has been constructivism. The underlying premise of constructivism is that when we encounter new situations we build upon pre-existing internal models, known as schema or schemata. Bartlett (1932) described a schema as 'an active organisation of past reactions, or past experiences, which must always be supposed to be operating in any well-adapted organismic response'. Piaget (1952), who further developed schema theory, argued that we acquire knowledge by 'acting upon the world': we seek out new experiences actively, and our brains either assimilate new experience into our own existing schemas or else we must alter our internal models to accommodate the new information. As we go through the day, all of our experiences continuously reinforce or alter what we already know, strengthening or undermining our mental schema. Constructivism argues that learning is an active process of constructing new models of reality – or reinforcing old learning.

Fry *et al.*, (1999) use this idea to support the notion of active learning approaches, linking schema development to an ideal of learning as 'transformative experience': 'Unless schemata are amended, learning will not occur. Learning (whether in cognitive, affective, interpersonal or psychomotor domains) involves a process of individual transformation.'

It might be expected that if we were exposed to new experiences which challenged our previous internal models, the schema would automatically change to accommodate the challenge. If this were always so, teaching would be very easy. Unfortunately, that is not the case. There isn't a predetermined link between experiences, which we might assume would challenge our internal models, and transformative learning. In other words, 'experience', of itself, is not necessarily transformative. A learning experience, such as reading a book, listening to a lecture, undertaking a new activity or attending a staff development session, does not necessarily lead to learning taking place. It may simply be an act of 'exposure' rather than an inner transformative event at any level. Moreover, as Bartlett showed (1932), we are more likely to adapt (or 'transform') new information until it fits our pre-existing viewpoints than we are to change our previous opinions to fit new data. Dahlgren (1984) argues that students' hold over new learning is often confused whilst changes in their conceptual models are 'relatively rare, fragile and context-dependent occurrences'. This chapter will explore some of the reasons for inhibited learning in adult students as well as looking at what can lead to motivated, engaged learning.

Learning contexts: external environments

In the 1970s and 1980s, theories of learning were very much influenced by a resurgent interest in Vygotsky. Vygotsky (1962) argued that what we regard as internal cognitive processes, such as memory, voluntary attention and language are determined by the culture in which we develop. Social interactions, and the overar-

ching culture in which these take place, influence us in what we consider worthy of attention, how we create value systems, and how we value ourselves within those systems. If, for example, neat handwriting and spelling are strongly valued by teachers, a person with a good capacity for generating ideas but who writes illegibly and with bad spelling may be regarded as 'not very bright'. The person may internalise this model. This may be true even when it contradicts feedback they receive from others: the view of a particular lecturer or a poor exam grade can outweigh the impact of positive input received from elsewhere. Interpersonal behaviours and socially situated beliefs become intrapersonal cognitive processes.

The 'handwriting' example given above typifies the experience of many adults who return to higher education. They carry an internal model which has been socially formed by existing norms of what is clever and what is not, and which often underestimates their range of abilities, especially in those areas which are difficult to assess through formal testing, such as interpersonal skills, creativity, inventiveness, self-reliance and entrepreneurship. It is important that, as educators, we recognise the previous factors that have influenced students' beliefs about themselves as learners. At the very least, we must take care not to reproduce interactions which reinforce unhelpful and inhibitory ways of learning. In many cases, we will achieve more from our students if we address, head on, how they perceive themselves as learners, and invite them to consider whether this assists or inhibits their current learning (Cottrell, 1999). Indeed, it is often underlying beliefs about ability and performance rather than particular skills or actual performance which are most influential on a student's future progress.

Where Piaget argued that we do naturally develop from lower to higher states of learning development (Miller, 1989), Vygotsky (1988) argued that development to higher states of learning is far from automatic. He laid emphasis on the need for a teacher or mentor to structure activity and to support learning from one stage to the next. He described a 'Zone of Proximal

Development' – a potential for a 'next stage' of learning which could only be achieved through support. In particular, he argued that the development of abstract modes of thought required specific instruction (Butterworth and Harris, 1994). Research tends to support the view that most adults do not naturally reach the stage of formal abstract thinking. King (1985) has shown that most adults fail on the highest stages of Piaget's tasks, the 'formal operation stage' of abstract or hypothetical thought, even though Piaget believed this would be attained by early adolescence. Nonetheless, King argues, adults incapable of Piaget's tasks in abstract reasoning are nonetheless capable of higher level inferential and analytical thinking in their life contexts and situated specialisms, whether this be in car mechanics or discussing animal tracking – in other words, when they are working from a knowledge base recognisable to them.

Bruner (1975) used the term 'scaffolding' to refer to ways that childhood learning is supported by adults who build on existing competence in order to accomplish next-stage tasks. The adult, being more experienced, can organise activity to structure the learning experience. This allows learners to move beyond their current levels of performance. Although Bruner used this idea in relation to very young children, it has been applied to classroom teaching (Edwards and Mercer, 1987) and is a useful concept to apply to adult learning. Research on problem solving has highlighted the key role the teacher has in leading students to apply learning acquired in one context to another. Research into mathematical problem solving, for example, suggests that for skills to be transferred, the student has to be *helped* to identify common features of the old and new problems or situations, looking especially for similarities in the underlying structure of the two problems. In other words, the teacher has to make very explicit the link between previous and new learning or else the student may not realise that two problems or exercises are connected. In addition, the new learning needs to be pitched at a similar level of complexity to that already covered (Reed *et al.*, 1985).

Often, when teaching has not honoured these basic principles, a pupil or student will feel lost and withdraw, thinking the fault lies with their intelligence, rather than in the way the problem was presented. Teachers can help students to identify and clarify what they already know, and use this knowledge as the basis for the next step in their learning. Whenever we speak about 'transferable skills', for example, we need to be aware of the need for a teacher or mentor to scaffold the process of recognising, applying and articulating in one context the skills acquired or required in another. Perry (1970) has shown how students, especially in the first year, are generally absolutist in their thinking, looking for right answers and the proper ways of doing things. They want to know how they can 'deliver' what lecturers want. There are different ways that this could be viewed. For example, when students ask 'how can I get a first?', this could be regarded as a retrograde step – a desire to be 'led by the hand' or spoon-fed (Miller, 1998). On the other hand, it could be construed as a willingness to learn, motivation to achieve, reflection on current levels of performance, evidence of some critical self-awareness and openness to the scaffolding process.

Learning as transformation towards autonomy

Boud (1989) outlined four traditions of adult education: 'training and efficiency', 'androgogical', 'humanistic' and 'critical', each with a different view of the learner and what the learner needs. Usher *et al.* (1997) identified, nonetheless, a common thread in these disparate approaches: each, they suggest, regards adults as having a 'natural potential' for autonomy that could be released if certain barriers were simply removed. For the 'training' approach, sometimes known as 'technicist', autonomy is acquired by gaining control over the learning process, albeit within predefined, externally prescribed, knowledge and skills areas. The androgogical approach (Knowles, 1978), argues that learners need to have their own experiences validated and used as the basis of their learning –

although the constructed nature of the interpretations made of that experience is perhaps underexplored in this approach. For the humanistic school, the learner needs to be emancipated from oppressive learning conditions (Rogers, 1967, 1983): teachers should become facilitators to enable students to regain their autonomy. Learners, it is conceded, to become autonomous, 'may need the context of a highly supportive and respectful environment' to help them recognise and explore individual needs. Critical pedagogy puts less emphasis on individual learners and looks for the emancipation at a social level (Brah and Hoy, 1989).

From a postmodernist perspective, there is not an essential 'autonomous student' waiting to get out; instead, the learner is perceived as a constructed, changing entity, 'caught up in' relations, texts, narratives. Usher *et al.* (1997), drawing on Shotter (1989, 1993) and Flax (1993), argue that there is not an originary or 'authentic self' to be emancipated: the 'self' itself is constructed and impermanent. It is always situated within social and cultural contexts, an educational and training history, ideological contexts and so forth. Education may change the 'self', may transform the learner, but not simply through the removal of barriers: an active construction or reconstruction of the learner would form part of that process.

The particular experiences of individual students are likely to result in their needing different combinations of response drawn from each of the learning approaches described above: different levels of training, learning which builds from experience, and supportive learning environments. In addition, students can benefit from gaining an understanding of how contexts, processes, and narratives have shaped their 'learning selves'. For example, those who hold their own learning in poor esteem can benefit from addressing the origin of their attitudes towards, and definitions of, 'intelligence' and how they came to be appraised as intelligent or not within the context of their previous educational culture.

Embedded learning and meaningful tasks

People can fail to perform well on tasks that are given to them because the tasks do not make sense to them (Donaldson, 1987). When a task is meaningful in terms of previous experience, people are able to undertake the kind of reasoning that they are not able to manage when tasks are presented in more abstract ways. Donaldson noted, for example, that adults can have difficulties with tasks that require very close reading or accurate interpretation of specific words, especially on abstract tasks that do not make sense in terms of everyday experience. She found that even adults tend to read globally, taking in information in a general sense and they may not consider using a close, word-by-word reading strategy unless trained to do so. This has a bearing on the behaviours of undergraduates in relation to course reading and assessment, where success may be dependent on close analytical reading and interpretation. Students who do not read analytically may need guidance in how to do so and with a rationale that makes the task meaningful. It is especially pertinent for interpreting exam questions where there isn't a wider context to inform those who use a global rather than an analytical reading style.

When students fail, it is often assumed that this is because they are not 'bright' enough. In many circumstances, this may be because the student has not yet been exposed to sufficient concrete experience of higher education in order to develop abstract schema of what it is to be a student at this level. They may not have sufficient experience of required conventions. This is especially true of mature students who return to education from work or through access courses, or who are first generation in HE. In addition, students can lack adequate acquaintance with the specialised language needed to make sense, at speed, of what is said (in lectures, for example) or to interpret assessment tasks. Assessment tasks such as essays or exams may have no real-life correlate for the student and, as the task appears to be meaningless, the student may find it difficult to work out what is

required. In parallel with Donaldson's research with children, Prosser and Millar (1989) found that physics students' ability to explain Newtonian mechanics varied greatly depending on whether the task involved an example of a moving car or a moving ice puck.

It is now argued that individual 'cognition is typically situated in a social and physical context and is rarely, if ever, decontextualised' (Butterworth, 1992). A tradition of regarding academic knowledge and skills as being of a different order of thinking and ability has not helped to encourage learners and teachers to look for similarities in the underlying expertise structure of both academic and everyday learning. In what may appear to be a paradox, the more abstract a task is, the more it is likely to be a product of a very particular culture (Richardson, 1991; Johnson-Laird, 1985). The example of the disparity between Brazilian street children's ability for 'street' maths compared to their difficulties with maths in classroom contexts is well known. George and Glasgow (1988) argue that this is true of many other areas of knowledge that learners encounter, including botany, physics, medicine, psychology and biology. Adult learners, in particular, bring a store of knowledge and skills that they may not be able to apply in a new learning context without support and may therefore undervalue and underuse pre-existing skills and knowledge. Even skills such as time management and problem solving may be accessible to adults in the context of home or work but they may not recognise these as applicable to the HE context.

From concrete to abstract skills

Our ability to think in abstract ways about something may depend on having already had real-life experience of problems of a similar nature. Butterworth (1992), describes how abstract notions such as 'generosity' are actually concrete social realities. The real-life, concrete experience allows us to develop a mental model, which later provides the basis for abstract thinking. If we have gaps in concrete experience – for example, with manipulating numbers – we are

likely to find it harder to move on to more abstract examples until we fill those gaps. Butterworth argues that when we are presented with a familiar problem in an unfamiliar context, we may be unable to recognise that the two are the same. This can make us look like complete beginners when this is not the case. We may need somebody to point out the similarity between what we already know and the new learning – and then we can do it.

What this research suggests is that if we want students to develop abstract reasoning skills, they need to begin from concrete experience that makes sense in the world they already inhabit. Donaldson (1978) writes: 'The paradoxical fact is that disembedded thinking, although by definition it calls for the ability to stand back from life, yields its greatest riches when it is conjoined with doing.' Hatano and Inagaki (1992) make a distinction between 'routine' knowledge which is tied to specific contexts, and 'conceptual knowledge' which is transferable to new situations. They found that experience of particular concrete situations could be used, through analogy, to develop conceptual knowledge applicable to new contexts. They found that those who merely observed others rather than having direct, practical experience were less able to develop to a conceptual level of thinking about the subject.

This is relevant to many aspects of HE teaching, and in particular to skills development. If abstract thinking is a (potentially) emergent property of concrete experience, then it is to be expected that students may find it very difficult to apply what is learnt through 'generic' skills training. Indeed, students generally are very discontented by study skills provision when this is taught in an abstract way, separate from other aspects of the curriculum. Content-free skills modules work counter to the natural propensity of students to build conceptual skills from experience. It is much easier for students to learn skills when the direct relevance of these to the curriculum and to assessment is made explicit, and when these are delivered using course materials and subject-specific examples.

Study skills can become 'conceptual' knowl-

edge, transferable to new situations, when students are exposed to embedded training and experience over time. Even then, as was mentioned above, the skill may only become transferable, when its applicability to a new context is made explicit by someone familiar with both the original learning context and the situation to which the skill must be applied. In other words, lecturers cannot assume that students who have applied study skills well in one area of the curriculum will be able to apply them to different areas unless the link is made explicit.

Equilibration: managing confusion

Although Piaget's concepts of assimilation and accommodation are often referred to in explanations of learning, the key element in Piaget's model was the process of equilibration (1975), often omitted from accounts of his ideas. Piaget argued that equilibration occurs in three stages:

- equilibrium: a pre-existing state of satisfaction with our way of thinking;
- disequilibrium: a dissatisfied awareness of limitations in our existing ways of thinking;
- a more stable equilibrium: we move to a more sophisticated way of thinking that overcomes the limitations of our previous thinking.

Siegler (1991) gives the example of a child who thinks that only animals are living things. When she hears plants referred to as being alive, she becomes uncertain of what 'alive' means. This uncertainty, although temporarily uncomfortable, is a necessary stage in opening up to new ideas. Dissatisfaction begins an internal questioning which opens us up to exploring new options. For students to progress to more sophisticated ways of thinking, they need to be receptive to disequilibrium and to be able to manage or 'contain' short-term confusion. Otherwise, they may cling to the security of their former equilibrium.

Creating opportunities for disequilibrium

Although universities tend to place a premium on critical awareness and clear thinking, there is also a need to support students, constructively,