## Contents

	About the editors and specialist contributors	ix
	Scries editor's foreword Foreword	xiv xv
	<b>Introduction</b> Alastair Irons and Sylvia Alexander Setting the scene 1; Identifying the audience 2; Outlining the aims 3; Outlining the structure 4; Meeting the challenge 4; References 5	1
1.	<b>Current issues</b> Alastair Irons and Sylvia Alexander Introduction 6; Pre-entry 8; Workload – reading for a degree 9; Curriculum issues 10; Transferable skills 11; Pedagogy 12; Learning resources 13; Increasing participation 13; Widening participation 13; HE in FE 15; Accessibility/disability 15; Female entrants 15; Developing strategies 16; Sunnary 16; References 17	6
Part	1. Teaching and the support of learning	19
2.	Motivating computing students Peggy Gregory and Tony Jenkins Introduction 21; Understanding motivation 22; Practical ideas for motivating computing students 24; The top ten tips 27; Further references 28	21
3.	The role of practical skills in computing education Fintan Culwin Introduction 29; A taxonomy of programming courses 30; The philosophy of skills learning 33; Conclusion 35;	29

The philosoph References 36

4.	Learning and teaching with computers Ian Benest	38
	Introduction 38; Online lectures 40; Structure of lectures 40; Static display of content 41; Creating the aural fragments 42; Constructing the lecture 43; Disability considerations 44;	
	Navigation 45; Summary 46; References 47	
5.	Accessibility, disability and computing David Sloan and Loma Gibson Introduction 48; Teaching students to think about accessibility 49; Accessibility defined 49; Support for accessibility 50; Disabled users as end users 51; Accessibility and the teaching and learning environment 52; Case study: Division of Applied Computing, University of Dundee 54; Conclusion 55; References 56	48
6.	Variations on a theme: divisions and union in a maturing discipline Lillian N. Cassel Introduction 57; Computing curricula developments 57; Continuous curriculum and programme development 59; Looking ahead 63; References 66	57
Part	2. Learning activities for computing students	67
7.	<b>Groupwork for computing students</b> Liz Burd	69
	Achievement of educational goals 70; Fostering quality teamwork 72; Fair assessment for all 73; Final conclusions 74; References 75	
8.	Automating the process of skills-based assessment Mike Joy Introduction 76; Computer-assisted assessment (CAA) 76; Assessment of programming skills 78; Issues 79; Generic products 80; Case study 1: CourseMarker 82; Case study 2: BOSS 82; Conclusion 83; Further information 84; Acknowledgements 84; References 84	76
9.	Motivation and electronic assessment Stephen Bostock Assessment, motivation and learning 86; Innovative assessment 88; Computer-assisted assessment (CAA) 89; Group assessment 91; Peer assessment 91; Self-assessment 94; Students setting	86

assessments 94; Conclusion 95; References 96

10.	Reducing plagiarism in computing Alastair Irons Introduction 100; What is plagiarism? 101; Why is plagiarism an issue? 103; Why do students plagiarize? 104; How big an issue is it? 104; How to tackle plagiarism? 105; Summary 108; References 109	100
Part	Part 3. Developing effective learning environments	
11.	<b>Evaluating what works in distance learning</b> <i>Patrick McAndrew</i> Introduction 113; Distance learning 113; Evaluation approaches 115; The computing course 115; Evaluation 116; Lessons learnt 117; Examples of evaluation data 118; Use of online questionnaires 119; Conclusions 121; Acknowledgements 121; References 122	113
12.	Industrial input to the computing curriculum Nancy R. Mead Some industry beliefs about software engineering graduates 123; Studies of industry/university collaboration 125; The approach 127; Successful collaboration construction and execution 129; Industry viewpoint 132; Other sources of industrial input 133; Acknowledgement 134; References 134	123
13.	<b>Computing education and entrepreneurial spirit</b> Sylvia Alexander, Gerry McAllister and Deborah Trayhum Background 136; The changing business environment 137; What is entrepreneurship? 138; Entrepreneurship and HE 139; Teaching entrepreneurship 140; Team approach 143; Deliverables and assessment 144; Incubation 146; Lifelong learning 146; References 147	136
14.	Higher education, IT and industry Gillian Lovegrove Introduction 148; Historical view 149; Masters conversion courses 149; Employment 150; Gender 151; Answering our critics 152; Graduates' views 153; Inside our universities 154; Support to lobby for 154; Possible action 155; Summary 156; References 156	148

Par	Part 4. Reflective practice and personal development	
15.	Continuing professional development for the computing academic: wheeling in the Trojan Horse Su White and Hugh Davis Introduction 161; Motivations 162; Barriers 164; Objectives 165; Awareness 166; Understanding 168; Use 169; Conclusion 171; Thanks and acknowledgements 171; Further reading 171	161
16.	<b>Improving the quality of teaching in computing</b> <i>Andrew McGettrick</i> Introduction 172; What is quality? 172; Published quality documents 173; Nature of learning and teaching 176; Assessment issues 178; Some important observations 179; Nature of improvement 180; Concluding comments 181; References 181	172
17.	<b>Technology and the reflective practitioner</b> <i>Tom Boyle</i> Introduction 182; Schön and the reflective practitioner: teaching, action research and rigorous knowledge 183; The crisis in the teaching and learning of programming 184; Technology and reflective practice in computing 185; Developing rigorous action research: barriers and opportunities 186; References 187	182
Conclusion		189
18.	Future issues in computing Alastair Irons and Sylvia Alexander Introduction 191; Issues to be addressed 192; Technologies 197; Student support 200; Continuous professional development 201; Quality enhancement 202; Closing comments 203; References 204	191
	Author index Subject index	205 208