
Developing Teaching and Learning in Higher Education

Gill Nicholls



London and New York

Also available as a printed book
see title verso for ISBN details

Developing Teaching and Learning in Higher Education

Higher education is facing increasing demands for teaching excellence and as a result new lecturers are now expected to have training and induction in teaching and learning strategies. This book provides new lecturers with an easy and accessible guide to planning and preparing teaching sessions, teaching a diverse student population and assessing students' progress and achievement. Furthermore, the book recognises the demands of the Institute for Learning and Teaching (ILT) and guides the lecturer through the process of reflection and development required to become a member of the ILT.

The book addresses key areas, as recommended by the ILT, including:

- planning and preparation;
- conducting teaching and learning sessions;
- assessment and evaluation;
- revising and improving teaching;
- leadership, management and administration;
- continual professional development.

This accessible, user-friendly book is directly related to most induction programmes which new lecturers attend. It is essential reading for all new and established lecturers, and academics keen to develop their teaching and learning strategies.

Gill Nicholls is Professor of Education and Director of the Institute for Learning and Teaching at King's College, the University of London.

Developing Teaching and Learning in Higher Education

Gill Nicholls



London and New York

First published 2002 by RoutledgeFalmer
11 New Fetter Lane, London EC4P 4EE

Simultaneously published in the USA and Canada
by RoutledgeFalmer
29 West 35th Street, New York, NY 10001

This edition published in the Taylor & Francis e-Library, 2002.

RoutledgeFalmer is an imprint of the Taylor & Francis Group

© 2002 Gill Nicholls

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

British Library Cataloguing in Publication Data

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

Library of Congress Cataloging in Publication Data

Nicholls, Gill.

Developing teaching and learning in higher education /

Gill Nicholls.

p. cm.

Includes bibliographical references and index.

1. College teaching – Great Britain. 2. Learning. I. Title.

LB2331 .N53 2002

378.1'25—dc21

2001034870

ISBN 0-415-23696-7 (paperback)

ISBN 0-415-23695-9 (hardback)

ISBN 0-203-46923-2 Master e-book ISBN

ISBN 0-203-77747-6 (Adobe eReader Format)

Contents

<i>Illustrations</i>	vii
<i>Acknowledgements</i>	ix
1 The changing context of teaching and learning in higher education	1
2 Developing teaching and learning	8
3 Student learning	20
4 Planning and preparation	40
5 Programme and course design	51
6 Conducting teaching and learning sessions	76
7 Assessment	104
8 Revising and improving teaching	127
9 Leadership, management and administration	147
10 Continual professional development	158
11 Collecting evidence and building a portfolio	171
12 Final discussion	181
<i>Bibliography</i>	187
<i>Index</i>	193

Illustrations

Figures

2.1	Framework for effective teaching	13
2.2	Models of effective teaching	14
3.1	A basic interpretation of Bruner's information-processing model	25
3.2	Approaches to learning	28
3.3	Student learning in context	28
3.4	Framework of descriptions of student learning Entwistle and Ramsden	29
4.1	The four stages of effective session planning	41
5.1	A simple model of development	52
5.2	Improved model	53
5.3	Model used to plan a programme	54
5.4	The model as a tool for development	56
5.5	Cyclical development and improvement of the model	56
5.6	Individual hopes and goals in the development cycle	57
5.7	Evaluation cycle	75
7.1	Assessment and development	105
7.2	A framework for recording and reporting	125
8.1	Areas of possible improvement	130
8.2	Examples of content reflection	135
8.3	Reflecting and reviewing cycle	137
8.4	Process to help systematic review and reflection of pedagogy	139
9.1	Elements of leadership	148
9.2	The domains of academic leadership	152
10.1	Relationship between professional development and the individual	159
10.2	Interplay of issues in planning professional development activities	167
10.3	A continuum of needs	167
10.4	Need for one-to-one collaboration	169
12.1	Learning at the centre of professional development	182

Tables

1.1	Booth membership framework	4
2.1	Attributes of effective teachers	9
3.1	Research into matching learning styles and teaching styles	35
3.2	Literature related to how students adapt their behaviour to respond to the learning situation	36
5.1	Quality of teaching and learning	73
5.2	Programme organisation	73
5.3	Student motivation and attainment	74
6.1	Summary of small group teaching: a classification	89
6.2	The selection process	97
6.3	Examples of teaching methods and technological applicability	97
7.1	Terminology for multiple-choice assessment	120
7.2	Framework for constructing a multiple-choice assessment	120
8.1	Construct taxonomy	142
8.2	Criteria for evaluating teaching	145
8.3	Elements of effective teaching (students)	146
8.4	Elements of effective teaching (teachers)	146
11.1	Evidence in constructing an action plan	176

Acknowledgements

I would like to thank Anna Clarkson of Taylor & Francis for the opportunity to write this book and for all the support given throughout the development.

The book is a product of many conversations and teaching sessions with fellow academics and new lecturers. I am indebted to them all for the endless encouragement to complete the book.

Special thanks go to my colleagues at the Institute of Education for their help with the portfolio of evidence and King's College where the book was completed.

The changing context of teaching and learning in higher education

Introduction

The increasing demands for teaching excellence in higher education have led to new academics needing induction into what it is to teach and how students learn. In the United Kingdom in particular, the creation of the Institute for Learning and Teaching (ILT) has increased the pressure on universities to provide and deliver courses that meet the demands and recommendations of the ILT within the domain of teaching and learning.

This book recognises the demands of the ILT, but also demonstrates that teaching and learning require a positive approach, one that encourages diversity, creativity, enthusiasm and commitment to the art of teaching. It also suggests that the individual approach to professional development within the context of teaching and learning is essential if effective learning environments are to be created and sustained. The book recognises and encourages the way in which teaching is understood and pedagogical relationships practised, and that these are different across subject areas.

Underpinning this book is the recognition that ILT membership is advisable for new and established academics alike. However, new academics will require help in a different way from established academics, part of which is an appreciation that teaching is a fundamental way of learning their subject and that it is closely linked to research and scholarship. The key elements to achieve membership are for all academics to demonstrate:

- 1 Knowledge of their subject and its pedagogy;
- 2 Practice that is underpinned by a range of professional values.

In order to help new academics, existing lecturers and planners of courses achieve these goals, this book has been constructed in such a way as to facilitate learning and development. The design is progressive in approach, with diagrams, tasks, and points for consideration and exemplars to assist development.

The book addresses six basic generic issues as recommended by the ILT. These are:

- 1 Planning and preparation;
- 2 Conducting teaching and learning sessions;
- 3 Assessment and evaluation;
- 4 Reviewing and improving teaching;
- 5 Academic administration, management and leadership teaching;
- 6 Continual professional development.

Within each of the identified areas, tasks and points for consideration are given to help the new academic deal with complexities of developing teaching and learning in higher education. Although the six areas of the ILT guide the framework of the text, the book takes a more in-depth view of teaching and learning. The perspective given is one that aims to help the new academic understand the reasons for engaging in some of the activities such as planning and preparation that are key to successful and effective teaching and learning. The ILT expects academics to collect evidence and through this evidence to illustrate development within the six categories by showing they have knowledge and understanding of underpinning knowledge associated with their subject. These include:

- the subject material that they will teach to their students;
- how their subject is learned and taught;
- how students learn, both generically and in their own subject;
- teaching approaches;
- the use of learning technologies;
- techniques for monitoring and evaluating their own teaching;
- their institution's mission and how it affects teaching and learning strategies;
- implications of quality assurance for practice;
- regulations, policies and practices affecting their own work;
- the professional values underpinning practice.

The main aim of this book is to provide new academic staff with the opportunity to reflect upon their teaching and academic experiences in a way that enhances and possibly changes their teaching and learning environments within their academic practice. It suggests and thus focuses on teaching, learning and academic practice as a complementary set of ideals, aspirations or outcomes that include student learning outcomes and the advancement of knowledge. The book takes each element identified by the ILT but tries to link and make connections between the various components and the implications and consequences each component may have on the other. Thus the book integrates theory and practice in a pragmatic and helpful

way. Throughout the book there are stopping points, entitled ‘points for consideration’; these have been placed strategically to assist and enhance reflection on teaching, learning and academic practice.

In order to understand why teaching and learning now takes such a prevalent place in higher education debates it is necessary to examine, albeit briefly, the history and inception of the Institute for Learning and Teaching.

Brief history of the Institute for Learning and Teaching (ILT)

University teaching might be called the hidden profession. It is practised as a secret rite behind closed doors and is not mentioned in polite academic society.

(Mathews, quoted in Layton, 1963, p. 8)

Prior to the Dearing Report (NCIHE, 1997), it might have been possible to support this view of teaching in many British universities, a view that assumed teaching skills to be conferred on lecturers as a postgraduate gift that was neither appropriate nor necessary to enquire into or closely scrutinise. Communication of knowledge was considered secondary to its advancement, the balance between teaching and research being heavily biased towards the latter. However, Dearing challenged this perspective by stating that:

Institutions and their staff face a great challenge if our vision that the United Kingdom should be at the fore front of world practice in learning and teaching in higher education is to be realised.

(Paragraph 8.56)

Demands of the ILT

These have changed and continue to change as this book is being written, and for this reason it is necessary to explore what the demands were, how they have changed, what they are now, and what they may be in the future. The demands will, and already have had, implications for those involved in teaching and learning in the higher education community.

Early requirements and recommendations

The proposed functions of the ILT following the Dearing Report had three main purposes:

- 1 The accreditation of programmes of training for higher education teachers;

4 The changing context of teaching and learning

- 2 The research and development in teaching and learning;
- 3 The stimulation of innovation.

This proposed approach is intended to provide a framework around which individual institutions (or consortia) can plan and develop their own pathways and programmes.

Levels of membership

Within the national framework the proposed structure was to have three levels of membership: associate member, member and fellow. The criteria for higher levels of membership are show in Table 1.1. The criteria focus on mainstream teaching and learning activities that have been broadened to include activities carried out by other staff in support of teaching and learning. The specified requirements for ILT membership are explained in terms of a range of teaching outcomes that include knowledge, understanding and a range of skills and values a teacher acquires through training and/or experience. The categories of membership are distinguished by the range of outcomes achieved by individuals and their level of professional autonomy and responsibility.

Table 1.1 Booth membership framework

Category or level of membership	Illustrative range of responsibility
Associate Part 1	Classroom practice, marking, evaluation of teaching
Associate Part 2	In addition to above: Design of a module, unit or series of teaching sessions, design of assessment, evaluation of modules
Member	In addition to the above: Curriculum/programme design (e.g. across a degree), improvement of curricular/programmes, innovation in own course practice, evaluation of programmes, supervision of associates
Fellow	In addition to the above: Leader of change (across institutions or disciplines) in teaching or curricula, through research, publications, work on disciplinary or professional bodies

Five broad areas of responsibility associated with higher education (HE) teaching have been identified, and members are expected to achieve all or most of the outcomes linked under the five broad headings. These are:

- 1 Planning and preparation;
- 2 Conducting teaching and learning sessions;

- 3 Assessment and evaluation;
- 4 Reviewing and improving teaching;
- 5 Academic administration, management and leadership teaching.

Continual professional development is the sixth element that all academics must be actively involved in.

Routes to membership

The ILT, having been set up as a professional body for higher education staff involved in teaching and the support of learning, is envisaged in time as being the main source of professional recognition for those engaged in teaching and learning support in higher education.

As a member of this professional institution a member would be able to:

- obtain recognition for the professionalism of their teaching;
- keep updated on developments in teaching and learning in HE and on methods of self-evaluation and improvement;
- obtain information and guidance on implementing new learning and teaching strategies, including information communication technology (ICT);
- have access to new research, publications and conference seminars.

The proposed routes to membership and the criteria by which routes are identified have the following key features that are based on five areas of professional activity:

- 1 Teaching and/or supporting learning in HE;
- 2 Contribution to the design and planning of learning activities and/or programmes of study;
- 3 Provision of feedback and assessment of students' learning;
- 4 Contribution to the development of effective learning environments and student support systems;
- 5 Reflection on personal practice in teaching and learning and work to improve the teaching process.

Within these five professional areas it is also stated that:

- Initial membership routes would be designed to recognise and reflect the current expertise of experienced staff.
- That there would be both individual and institutionally based routes that reflect the diversity of educational contexts within the sector which individuals will be able to apply for membership directly to the ILT, rather than through an institution, if they so wish.

- The membership criteria will be informed by underpinning knowledge and professional values including commitments to learning and scholarship as an integral part of teaching.

In Appendix 1 of the ILT's document on accreditation it is stated that:

Courses seeking accreditation should be designed with an awareness of the core knowledge and professional values that are expected of members of the Institute for Learning and Teaching in Higher Education.

Consideration of the core knowledge and values is a means to understanding the nature and context of teaching development that the ILT will be looking for.

Core knowledge

Members of the ILT will be expected to have knowledge and understanding of:

- the subject material they will be teaching;
- appropriate methods for teaching and learning in the subject area and at the level of the academic programme;
- models of how students learn, both generically and in their subject;
- the use of learning technologies appropriate to the context in which they teach;
- methods for monitoring and evaluating their own teaching;
- the implications of quality assurance for practice.

Professional values

Members of the ILT will be expected to adhere to the following professional values:

- a commitment to scholarship in teaching, both generally and within their own discipline;
- respect for individual learners and for their development and empowerment;
- a commitment to the development of learning communities, including students, teachers and all those engaged in learning support;
- a commitment to encouraging participation in higher education and to equality of educational opportunity;
- a commitment to continued reflection and evaluation and consequent improvement of their own practice.

The core knowledge and values are clearly described and laid down by the ILT. This book attempts to cover all the areas specified by the ILT. However, the book goes beyond these basic requirements. It suggests ideas and alternatives for the new academic practitioner to engage with, both in the context of institutional development, but most importantly personal development.

Using the book to its best advantage

The book is structured so that the elements of appropriate theory are incorporated and often introduce each element of learning and teaching in higher education. The theory is interwoven with points for consideration designed to help you identify key features that relate to behaviour or issues. A variety of methodologies are used to help you generate evidence of teaching, learning and academic practice (e.g. reflecting on elements of course design and development, observation of other lecturers' teaching, student evaluations and your own planning and preparation techniques).

The nature of the evidence collected is aimed at generating your portfolio of evidence for accreditation. This portfolio will be a personal record of teaching, learning and academic practice. It will represent your development in the areas of teaching and learning and demonstrate areas of competence and areas for future development. The evidence identified is collected throughout your programme and should show a developmental approach.

The book is designed to be used in a number of ways. It can be dipped in and out of as a means of a reference point to help with a specific problem, question or issue that you may need to consider and to help you reflect on a problem or issue encountered in a teaching/learning scenario.

Finally, the book attempts to transmit the professional elements that are required by a teacher in higher education. The need to understand and interpret professional knowledge, professional judgements and discipline knowledge are all tackled. It emphasises that in order to become effective, teaching needs to be seen as a continuous creative and problem-solving activity. Each student group is different, as is each individual within that group. Each student and each group of students will have their own identities, learning styles and approaches to learning. Planning and preparing teaching and learning environments that complement such diversity are a constant challenge to the teacher in higher education. This book attempts to make that challenge less stressful and more achievable.

Bibliography

- Abercrombie, M. (1970) *Aims and Techniques of Group Teaching*. London: SRHE.
- Abercrombie, M. (1993) *The Human Nature of Learning: Selections From the Work of M.L.J. Abercrombie*, ed. J.Nias. London: OU/SRHE.
- Anderson, L.W. (ed.) (1984) *Time and School Learning*. London: Croom Helm.
- Argyle, A. (1967) *The Psychology of Interpersonal Behaviour*. Harmondsworth: Penguin.
- Ausubel, D.P., Novak, J.D. and Hanesian, H. (eds.) (1968) *Educational Psychology: A Cognitive View*. New York: Holt, Rinehart and Winston.
- Barnes, D. (1987) *From Communication to Curriculum*. Harmondsworth: Penguin.
- Barnett, R. (1996) Models of quality in teacher education. *Oxford Review of Education*, 22 (2), pp. 161–78.
- Barnett, R. (1997) *Higher Education: A Critical Business*. Buckingham: SRHE/Open University Press.
- Barris, R., Kielhofner, G. and Bauber, D. (1985) Educational experience and changes in learning and value preference. *Occupational Therapy Journal of Research*, 5, pp. 243–56.
- Becher, T. (1989) *Academic Tribes and Territories*. Buckingham: SRHE/Open University Press.
- Becher, T. (1996) The learning professions. *Studies in Higher Education*, 21 (1), pp. 43–56.
- Berliner, D. (ed.) (1996) *Handbook of Educational Psychology*. New York: Macmillan.
- Biggs, J. (1978) Individual and group differences in study processes. *British Journal of Educational Psychology*, 48, pp. 266–79.
- Biggs, J. (1987) *Students' Approaches to Learning and Studying*. Hawthorn, Vic.: Australian Council for Educational Research.
- Biggs, J. (1989) Approaches to the enhancement of tertiary teaching. *Higher Education Research and Development*, 8, pp. 7–25
- Biggs, J. (1996) Enhancing teaching through constructive alignment. *Higher Education*, 32, pp. 1–18
- Biggs, J. (1999) *Teaching for Quality Learning at University*. Buckingham: SRHE/Open University Press.
- Bligh, D. (1986) *Teaching Thinking by Discussion*. Guildford: SRHE and NFER-Nelson.
- Bligh, D. (1998) *What's the Use of Lecturers?* Harmondsworth: Penguin Books.

- Bloom, B. (1964) *Taxonomy of Educational Objectives*, Vol. 1: *Cognitive Domain*. New York: McKay.
- Bolam, R., Clark, J., Jones, K., Harper-Jones, G., Timbrell, T., Jones, R. and Thorpe, R. (1995) The induction of newly qualified teachers in schools: where next? *British Journal on In-service Education*, 21 (3).
- Bork, A. (1987) Interaction: lessons from computer-based learning, in D. Laurillard (ed.) *Interactive Media: Working Methods and Practical Applications*. Chichester: Ellis Horwood.
- Boud, D. and Feletti, G. (1996) *The Challenge of Problem Based Learning*. London: Kogan Page.
- Boud, D., Keogh, R. and Walker, D. (ed.) (1985) *Reflection: Turning Experience into Learning*. London: Kogan Page.
- Bouffard, T., Boisvert, J., Vezeau, C. and Larouche, C. (1995) The impact of goal orientation on self-regulation and performance among college students. *British Journal of Educational Psychology*, 65, pp. 317–29.
- Boyer, E. (1987) *College: The Undergraduate Experience in America*. New York: Harper Row.
- Brew, A. and Wright, D. (1990) Changing teaching styles. *Distance Education*, 7 (2), pp. 183–212.
- Brockbank, M. and McGill, J. (1998) *Facilitating Reflective Learning in Higher Education*. Buckingham: SRHE/Open University Press.
- Brookfield, S.D. (1991) *Developing Critical Thinkers*. Milton Keynes: Open University Press.
- Brophy, J. (1983) Research on the self-fulfilling prophecy and teacher expectations. *Journal of Educational Psychology*, 75 (5), pp. 631–61.
- Brown, G. (1997) *Lecturing and Explaining*. London: Methuen
- Brown, G. and Atkins, M. (1988) *Effective Teaching in Higher Education*. London: Methuen
- Bruner, J.S. (1966) *Towards a Theory of Learning*. Cambridge, MA: Harvard University Press.
- Burnard, P. (1995) *Learning Human Skills: An Experiential and Reflective Guide for Nurses* (3rd edn). Oxford: Butterworth/Heinemann, Jossey-Bass.
- Butler, D.L. and Winne, P.H. (1995) Feedback and self-regulated learning: a theoretical synthesis. *Review of Educational Research*, 65 (3), pp. 245–81.
- Candy, P.C. (1994) *Self-direction for Lifelong Learning: A Comprehensive Guide to Theory and Practice*. San Francisco: Jossey-Bass.
- Canfield, A.A. (1976) *The Canfield Learning Styles Inventory*. Detroit: Humanics Media.
- Carpenter, C.U. and Bruce, H. (1976) Competency based curriculum. The Kentucky model. *American Vocational Journal*, 52 (1), pp. 58–61
- Claxton, G. (1984) *Live and Learn*. Milton Keynes: Open University Press.
- Craft, A. (1996) *Professional Development*. Milton Keynes: Open University Press.
- Darling, L. (2000) Portfolio as practice: the narratives of emerging teachers. *Teaching and Teacher Education*, 17 (1).
- Dewey, J. (1933) *How we Think*. Chicago, IL: Regency.
- Dunn, R., Deckinger, L., Withers, P. and Katzenstein, H. (1990) Should college students be taught how to do homework? *Illinois Research and Development Journal*, 26 (2), pp. 96–113.

- Edgerton, R., Hutchings, P. and Quinlan, K. (1991) *The Teaching Portfolio: Capturing the Scholarship in Teaching*. Washington, DC: American Association of Higher Education.
- Edwards, R. (1997) *Changing Places*. London: Routledge.
- Entwistle, N. (1982) *Styles of Learning and Teaching*, London: John Wiley.
- Entwistle, N. (1997) Introduction: phenomenography in higher education. *Higher Education*, 15, pp. 299–304.
- Entwistle, N. and Marton, F. (1984) Changing conceptions of learning and research, in F. Marton (ed.) *The Experience of Learning*. Edinburgh: Scottish Academic Press.
- Entwistle, N. and Ramsden, P. (1982) *Understanding Student Learning*. London: Croom Helm.
- Eurat, M. (1985) Knowledge creation and knowledge use in professional contexts. *Studies in Higher Education*, 10 (2), pp. 117–33.
- Eurat, M. (1994) *Developing Professional Knowledge and Competence*. London: Falmer Press.
- Evans, G. (1991) Lessons in cognitive demands and student processing in upper secondary mathematics, in G. Evans (ed.) *Learning to Teach Cognitive Skills*. Melbourne: Australian Council for Educational Research.
- Gagné, R.M. (1967) *The Conditions of Learning and Theory of Instruction* (1st edn). New York: Holt, Rinehart and Winston.
- Gagné, R.M. (1985) *The Conditions of Learning and Theory of Instruction*. (4th edn). New York: Holt, Rinehart and Winston.
- Gagné, R.M. and White, R. (1978) Memory structures and learning outcomes. *Review of Educational Research*, 48 (2), pp. 187–222.
- Goldman, R. and Warren, R. (1972) Configuration in discriminant space: a heuristic approach to study techniques. Paper presented at the meeting of the Western Psychological Association, Portland.
- Greeno, J.G. (1989) Situations, mental models and generative knowledge, in D. Klahr and K. Kotovsky (eds) *Complex Information Processing: The Impact of Herbert A. Simon*. Hillsdale, NJ: Erlbaum Associates.
- Griffiths, S. and Partington, P. (1992) *Enabling Active Learning in Small Groups: Module 5 in Effective Learning and Teaching in Higher Education*. Sheffield: UCoSDA/CVCP.
- Hatton, N. and Smith, D. (1995) Reflections in teacher education: towards definition and implementation. *Teacher and Teacher Education*, 7 (1), pp. 33–51.
- Hayes, J. and Allinson, C.W. (1993) Matching learning styles and instructional strategy: an application of the person–environment interaction paradigm. *Perceptual and Motor Skills*, 76, pp. 63–79.
- Hounsell, D.J. (1985) Learning and essay-writing. *Higher Education Research and Development*, 3, pp. 13–31.
- Jones, G. (2000) *Leadership Training: The Most Vital Competency*. UCoSDA Conference. <http://www.shef.ac.uk/ucosda/pages/services/events.leadership.html>
- Keefe, J.W. and Ferrell, B.G. (1990) Developing a defensible learning style paradigm. *Educational Leadership*, 48 (2), pp. 57–61.
- Kibler, M. (1970) Behavioural objectives and speech – communication instruction. *Central States Speech Journal*, 21 (2), pp. 71–80.
- Kolb, D. (1976) *Learning Styles Inventory* (Technical Manual). Boston, MA: McBar.

- Kolb, D. (1984) *Experiential Learning: Experience as a source of Learning*. Englewood Cliffs, NJ: Prentice Hall.
- Kotter, J.P. (1990) *A Force for Change: How Leadership Differs from Management*, New York: Free Press.
- Layton, D. (ed.) (1963) *University Teaching in Transition*. London: Oliver & Boyd.
- McGaghie, W. (1974) Learning in group settings: towards a classification of outcomes. *Educational Technology*, 14 (11), pp. 56–60.
- MacIntyre, A. (1984) *After Virtue* (2nd edn). Notre Dame, IN: University of Notre Dame Press.
- McKeachie, W.J., Pintrich, P.R., Lin, Y.G. and Smith, D.A.F. (1990) *Teaching and Learning in College Classrooms* (2nd edn). University of Michigan, National Center for Research to Improve Postsecondary Teaching and Learning.
- Marton, F. (1976) What does it take to learn? Some implications of an alternative view of learning, in N.J. Entwistle (ed.) *Strategies for Research and Development in Higher Education*. Amsterdam: Swets and Zeitlinger.
- Marton, F. (1988) Describing and improving learning, in R.R. Schmeck (ed.) *Learning Strategies and Learning Styles*. New York: Plenum.
- Marton, F. and Saljo, R. (1976) On qualitative differences in learning: outcomes and process. *British Journal of Educational Psychology*, 46, pp. 4–11
- Messick, S. (1984) The nature of cognitive styles: problems and promise in educational practice. *Educational Psychologist*, 19, pp. 59–74.
- Mezirow, J. (1992) *Transformative Dimensions of Adult Learning*. San Francisco, CA: Jossey Bass.
- NCIHE (1997) National Committee of Inquiry into Higher Education. Higher Education for a Learning Society. Dearing Report. London: HMSO.
- Nicholls, G. (2001) *Professional Development in Higher Education: New Dimensions and Directions*. London: Kogan Page.
- Pask, G. (1976) Styles and strategies of learning. *British Journal of Educational Psychology*, 46, pp. 128–48.
- Peterson, P.L. and Walber, H.J. (eds) (1979) *Research on Teaching*. Berkeley, CA: McCutchan.
- Prosser, M. (1994) A phenomenographic study of students' intuitive and conceptual understanding of certain electrical phenomena. *Instructional Science*, 22, pp. 189–205.
- Prosser, M. and Trigwell, K. (1997) *Understanding Learning and Teaching: The Experience in Higher Education*. Buckingham: SRHE/Open University Press.
- Ramsden, P. (1992). *Learning to Teach in Higher Education*. London: Routledge.
- Ramsden, P. (1994) Describing and explaining research productivity. *Higher Education*, 27, pp. 207–26.
- Ramsden, P. (1998) *Learning to Lead in Higher Education*. London: Routledge.
- Reid, D.J. and Johnstone, M. (1999) Improving teaching in higher education: student and teacher perspectives. *Educational Studies*, 25 (3), pp. 269–81.
- Riding, R. and Cheema, I. (1991) Cognitive styles – an overview and integration. *Educational Psychology*, 11 (3 and 4), pp. 193–215.
- Robotham, D. (1999) *Application of Learning Style Theory in Higher Education*. <http://www.chelt.ac.uk/el/philg/gdn/discuss/kolb2.htm>
- Rogers, C.R. (1969) *Freedom to Learn*. Cleveland, OH: Merrill.

- Rogoff, B. (1990) *Apprenticeship in Thinking: Cognitive Development in Social Context*. New York: Oxford University Press.
- Rowland, S. (1998) Turning academics into teachers? *Teaching in Higher Education*, 3 (2), pp. 303–14.
- Ryles, G. (1944) *The Concept of Mind*. London: Hutchinson.
- Saljo, R. (1982) *Learning and Understanding: A Study of Differences in Constructing Meaning From a Text*. Gothenburg: Acta Universitatis Gothenburgensis.
- Schon, D. (1988) *The Reflective Practitioner*. London: Temple Smith.
- Schmeck, R.R. (1983) Learning styles of college students, in R.F. Dillon and R.R. Schmeck (eds) *Individual Differences in Cognition*. Vol. 1. New York: Academic Press.
- Seldin, P. (1991) *The Teaching Portfolio. A Practical Guide to Improved Performance and Promotions*. Bolton, MA: Anker.
- Shulman, L. (1987) Knowledge and teaching: foundations of the new reform. *Harvard Educational Review*, 57 (1), pp. 1–22.
- Siedentop, D. (1991) *Developing Teaching Skills in Physical Education*. London: Mayfield Press.
- Standing, T. and Shevels, T. (1994) The management of learning groups – empirical evidence. *Training and Management Development Methods*, 8 (5), pp. 5–10.
- Stenhouse, L. (1972) Teaching through small group discussion: formality, rules and authority, in C.F. Page and H. Greenway (eds) *Innovation in Higher Education*. London: SRHE.
- Streufert, S. and Nogami, G.Y. (1989) Cognitive styles and complexity: implications for industrial and organisational psychology, in C.L. Cooper and I. Robertson (eds) *International Review of Industrial and Organisational Psychology*. Chichester: Wiley.
- Svensson, L. (1977) On qualitative differences in learning III – study skills and learning. *British Journal of Educational Psychology*, 47, pp. 233–43.
- Talbot, R. (1985) Situational influences on learning styles. *Industrial and Commercial Training*, 23 (1), pp. 19–28.
- Taylor, K.L. (1993) The role of scholarship in university teaching. *Canadian Journal of Higher Education*, 23 (3), pp. 64–79.
- Thomas, P.R. and Bain, J.D. (1984) Contextual dependence of learning approaches: the effects of assessment. *Human Learning*, 3, pp. 227–40.
- Trigwell, K.T. and Prosser, M. (1990) Using student learning outcomes measures in the evaluation of teaching. *Research and Development in Higher Education*, 13, pp. 390–7.
- Walker, M. (1994) Students' plagiarism in universities – what are we doing about it? *Higher Education Research and Development*, 17, pp. 89–106.
- Winsor P., Butt, R.L. and Reeves, H. (1999) Portraying professional development in preservice teacher education. *Teachers and Teaching*, 5 (1), pp. 33–59.
- Witkin, H.A. (1977) Field-dependent and field-independent cognitive styles and their educational implications. *Review of Educational Research*, 47 (1), pp. 1–64.
- Wittrock, M. (1986) Students' thought processes, in M. Wittrock (ed.) *Handbook of Research on Teaching*. New York: Macmillan.
- Wolfe, D.M and Kolb, D. (1984) Career development, personal growth and experiential learning in organisational psychology, in D. Kolb, I. Rubin and J. McIntyre (eds) *Readings on Human Behaviour*, 4th edn. New Jersey: Prentice Hall.

