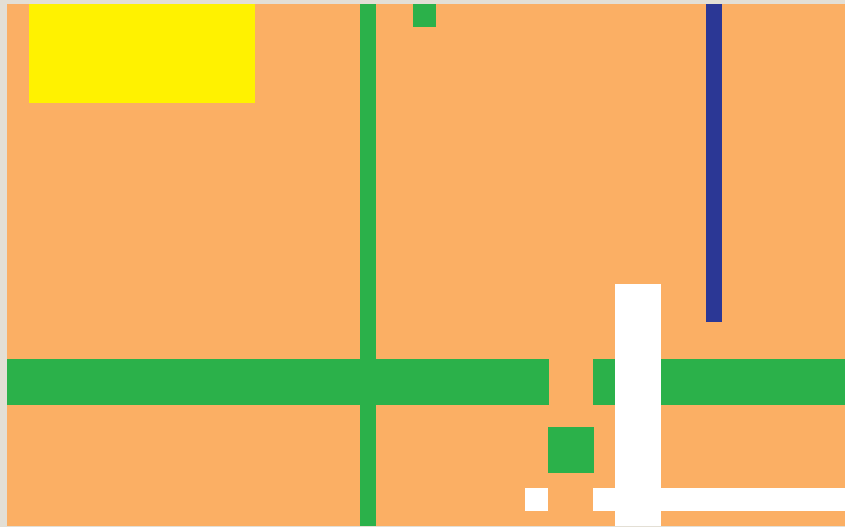


The Society for Research into Higher Education

Teaching for Quality Learning at University

Third Edition



John Biggs
and Catherine Tang

Teaching for Quality Learning at University

SRHE and Open University Press Imprint

Current titles include:

Catherine Bargh *et al.*: *University Leadership*
Ronald Barnett: *Beyond all Reason*
Ronald Barnett and Kelly Coate: *Engaging the Curriculum in Higher Education*
Ronald Barnett: *Reshaping the University*
Tony Becher and Paul R. Trowler: *Academic Tribes and Territories 2/e*
Richard Blackwell and Paul Blackmore (eds): *Towards Strategic Staff Development in Higher Education*
David Boud and Nicky Solomon (eds): *Work-based Learning*
Tom Bourner *et al.* (eds): *New Directions in Professional Higher Education*
John Brennan and Tarla Shah: *Managing Quality Higher Education*
Anne Brockbank and Ian McGill: *Facilitating Reflective Learning in Higher Education 2/e*
Ann Brooks and Alison Mackinnon (eds): *Gender and the Restructured University*
Burton R. Clark: *Sustaining Change in Universities*
James Cornford and Neil Pollock: *Putting the University Online*
John Cowan: *On Becoming an Innovative University Teacher 2/e*
Vaneeta D'Andrea and David Gosling: *Improving Teaching and Learning in Higher Education*
Sara Delamont, Paul Atkinson and Odette Parry: *Supervising the Doctorate 2/e*
Sara Delamont and Paul Atkinson: *Successful Research Careers*
Gerard Delanty: *Challenging Knowledge*
Chris Duke: *Managing the Learning University*
Heather Eggins (ed.): *Globalization and Reform in Higher Education*
Heather Eggins and Ranald Macdonald (eds): *The Scholarship of Academic Development*
Howard Green and Stuart Powell: *Doctoral Study in Contemporary Higher Education*
Merle Jacob and Tomas Hellström (eds): *The Future of Knowledge Production in the Academy*
Peter Knight: *Being a Teacher in Higher Education*
Peter Knight and Paul Trowler: *Departmental Leadership in Higher Education*
Peter Knight and Mantz Yorke: *Assessment, Learning and Employability*
Ray Land: *Educational Development*
Dina Lewis and Barbara Allan: *Virtual Learning Communities*
David McConnell: *E-Learning Groups and Communities*
Ian McNay (ed.): *Beyond Mass Higher Education*
Louise Morley: *Quality and Power in Higher Education*
Lynne Pearce: *How to Examine a Thesis*
Moirá Peelo and Terry Wareham (eds): *Failing Students in Higher Education*
Craig Prichard: *Making Managers in Universities and Colleges*
Stephen Rowland: *The Enquiring University Teacher*
Maggi Savin-Baden: *Problem-based Learning in Higher Education*
Maggi Savin-Baden: *Facilitating Problem-based Learning*
Maggi Savin-Baden and Claire Howell Major: *Foundations of Problem-based Learning*
Maggi Savin-Baden and Kay Wilkie: *Challenging Research in Problem-based Learning*
David Scott *et al.*: *Professional Doctorates*
Michael L. Shattock: *Managing Successful Universities*
Maria Slowey and David Watson: *Higher Education and the Lifecourse*
Colin Symes and John McIntyre (eds): *Working Knowledge*
Richard Taylor, Jean Barr and Tom Steele: *For a Radical Higher Education*
Malcolm Tight: *Researching Higher Education*
Penny Tinkler and Carolyn Jackson: *The Doctoral Examination Process*
Melanie Walker: *Higher Education Pedagogies*
Melanie Walker (ed.): *Reconstructing Professionalism in University Teaching*
Melanie Walker and Jon Nixon (eds): *Reclaiming Universities from a Runaway World*
Diana Woodward and Karen Ross: *Managing Equal Opportunities in Higher Education*
Mantz Yorke and Bernard Longden: *Retention and Student Success in Higher Education*

Teaching for Quality Learning at University

What the Student Does

3rd edition

John Biggs and Catherine Tang



Society for Research into Higher Education
& Open University Press

Open University Press
McGraw-Hill Education
McGraw-Hill House
Shoppenhangers Road
Maidenhead
Berkshire
England
SL6 2QL

email: enquiries@openup.co.uk
world wide web: www.openup.co.uk

and Two Penn Plaza, New York, NY 10121-2289, USA

First edition published 1999
Second edition published 2003
This third edition published 2007

Copyright © John Biggs and Catherine Tang 2007

All rights reserved. Except for the quotation of short passages for the purpose of criticism and review, no part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the publisher or a licence from the Copyright Licensing Agency Limited. Details of such licences (for reprographic reproduction) may be obtained from the Copyright Licensing Agency Ltd of Saffron House, 6-10 Kirby Street, London, EC1N 8TS.

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

ISBN-10 0 335 22126 2 (pb) 0 335 22127 0 (hb)
ISBN-13: 978 0 335 22126 4 (pb) 978 0 335 22127 1 (hb)

Library of Congress Cataloging-in-Publication Data
CIP data has been applied for

Typeset by RefineCatch Limited, Bungay, Suffolk
Printed in Poland by OZ Graf. S.A.
www.polskabook.pl

Learning takes place through the active behavior of the student: it is what *he* does that he learns, not what the teacher does.

Ralph W. Tyler (1949)

If students are to learn desired outcomes in a reasonably effective manner, then the teacher's fundamental task is to get students to engage in learning activities that are likely to result in their achieving those outcomes. . . . It is helpful to remember that what the student does is actually more important in determining what is learned than what the teacher does.

Thomas J. Shuell (1986)

Contents

List of boxes	viii
List of figures	x
List of tables	xi
List of tasks	xiii
Foreword to original edition	xv
Preface to third edition	xvii
Acknowledgements	xix
When you have read this book	xx
1 The changing scene in university teaching	1
2 Teaching according to how students learn	15
3 Setting the stage for effective teaching	31
4 Using constructive alignment in outcomes-based teaching and learning	50
5 Designing intended learning outcomes	64
6 Contexts for effective teaching and learning	91
7 Teaching/learning activities for declarative knowledge	104
8 Teaching/learning activities for functioning knowledge	135
9 Aligning assessment with intended learning outcomes: Principles	163
10 Assessing and grading declarative knowledge	195
11 Assessing and grading functioning knowledge	217
12 Implementing constructive alignment	247
13 Constructive alignment as implemented: Some examples	284
References	318
Index	331

List of boxes

1.1	Outcomes-based education, outcomes based education, outcome-based education and outcome based education: Which do we use?	8
4.1	How constructive alignment came into being	51
5.1	From objectives to intended learning outcomes in an engineering course	71
6.1	Adventure learning in the School of Law	95
7.1	Course preparation assignments in the teaching of sociology	113
7.2	Some examples of work-along exercises for a class in accounting of over 200 students	116
7.3	Dons struggle with stage fright	124
7.4	How reflection led to assessment being used as a TLA	130
8.1	A case in environmental education	139
8.2	An example of teaching/learning activities in acting skills	146
8.3	How not to encourage creativity	147
8.4	Designing a problem	155
9.1	Why measurement model procedures remain	176
9.2	How Faculty Office suggests final grades should be determined (and the best of British luck!)	181
9.3	The problem in Box 9.2	182
9.4	How not to 'mark' a dissertation	183
10.1	Two examples of students' views on multiple-choice tests	198
10.2	What do you remember of Thomas Jefferson?	204
10.3	An ordered-outcome item for physiotherapy students	205
10.4	A chemistry ordered-outcome item	206
10.5	A warning from an ancient history essay	211
11.1	Sample items that went into an assessment portfolio in a course for teachers	223

11.2	An example of assessing and grading a portfolio holistically	224
11.3	A powerful Venn item	236
12.1	Contents of a teaching portfolio	267
12.2	Some conditions for effective peer review (PR) of teaching for quality enhancement	270

List of figures

1.1	Student orientation, teaching method and level of engagement	10
2.1	Desired and actual level of engagement, approaches to learning and enhancing teaching	27
4.1	Aligning intended learning outcomes, teaching and assessment tasks	59
5.1	Interrelations between two levels of graduate attributes	68
5.2	A hierarchy of verbs that may be used to form intended learning outcomes	79
7.1	Effect of rest or change of activity on learning	109
7.2	Effect of testing at end of lecture on retention	109
9.1	Learning in four topics and their formative and summative assessment	165
9.2	Teacher's and student's perspectives on assessment	169
12.1	Three domains of interaction in implementing constructively aligned teaching and learning	248
12.2	Theory and transformative reflective practice in teaching	250
12.3	Administrative and educational needs – striking the right balance	276

List of tables

3.1	Aspects of teaching likely to lead to surface approaches	45
4.1	Intended learning outcomes (ILOs) for <i>The Nature of Teaching and Learning</i> and aligned teaching/learning activities (TLAs)	57
4.2	ILOs for <i>The Nature of Teaching and Learning</i> and aligned assessment tasks (ATs)	58
5.1	Some verbs for ILOs from the SOLO taxonomy	80
5.2	Some more ILO verbs from Bloom's revised taxonomy	81
5.3	Aligning programme ILOs with graduate attributes	86
6.1	Most people learn . . .	96
6.2	Some important general criteria for any TLA: a checklist	100
7.1	What teachers and students do in a lecture leading to an ILO containing 'explain'	106
8.1	What teachers and students do in a lecture leading to an ILO containing 'apply'	137
8.2	Some areas for developing functioning knowledge with sample ILOs and the teaching/learning situations where they may be located	137
9.1	Two lexicons	180
9.2	Comparing the measurement and standards models	189
10.1	Some typical declarative and functioning knowledge verbs by SOLO level	197
10.2	Grading criteria (rubrics) for an argue-a-case assignment	210
10.3	Conversions between percentage points, letter grades and GPA	211
10.4	Example of criteria (rubrics) for grading an ILO	214
11.1	Holistic grading of a portfolio of items	225
11.2	Grading the ILO 'reflect and improve'	226
12.1	Demands of the measurement model and those of good teaching	277
13.1	Grading criteria for the critical review of literature in veterinary science	291

xii *List of tables*

13.2	Examples of grading criteria of different assessment tasks in accounting	296
13.3	Weighting of the three assessment tasks in engineering with respect to the ILOs	299
13.4	Some examples of grading criteria for different assessment tasks in information systems	302
13.5	A quality-enhancement measure focusing on the mean results for a given course	304
13.6	A quality-enhancement measure focusing on the results obtained by an individual student	305
13.7	Some examples of grading criteria for different assessment tasks in management sciences	309
13.8	Holistic grading for the assessment portfolio in nursing	313

List of tasks

2.1	What are your theories of teaching and learning?	16
2.2	Does your teaching encourage surface or deep approaches to learning?	28
3.1	What messages of success and failure do you convey to your students?	34
3.2	What sort of classroom climate are you creating for your students?	42
3.3	Reflection on a critical teaching/assessment incident	44
3.4	What are the major problems in your own teaching that you would like to solve?	47
5.1	SOLO levels in approaches to learning question and why	77
5.2	Writing course ILOs	84
5.3	Aligning programme ILOs with graduate attributes	86
5.4	Aligning course ILOs with programme ILOs	88
6.1	The teaching/learning context you have created	101
7.1	What happened in your large class 'lecture'?	122
7.2	Redesigning your next large class 'lecture'	123
7.3	TLAs for declarative knowledge	131
8.1	Getting going with PBL	156
8.2	ILOs and TLAs in putting knowledge to work	159
9.1	Some cats to place among your collegial pigeons: six assessment dilemmas for you to consider	165
9.2	NRA or CRA?	179
9.3	Where does your assessment stand?	191
10.1	Writing ordered-outcome items	208
10.2	Design an assessment task or tasks for one of your course ILOs	215
11.1	Design portfolio assessment for functioning knowledge	227
11.2	Venn diagram of TLAs and ATs for functioning knowledge	237
11.3	Design an assessment task or tasks for one of your course ILOs	243

12.1	Do your quality assurance processes encourage or discourage aligned teaching?	278
12.2	Follow-up of Task 3.3	279
12.3	Follow-up of Task 3.4	280
13.1	Your achievement of the intended outcomes of this book	317

Foreword to original edition

The book is an exceptional introduction to some difficult ideas. It is full of downright good advice for every academic who wants to do something practical to improve his or her students' learning. So much of what we read on this subject is either a recycling of sensible advice topped by a thin layer of second-hand theory, or a dense treatise suitable for graduate students with a taste for the tougher courses. Not many writers are able to take the reader along the middle road, where theory applied with a delicate touch enables us to transform our practice. What is unique about Biggs is his way with words, his outspoken fluency, his precision, his depth of knowledge, his inventiveness, or rather how he blends all these things together. Like all good teachers, he engages us from the start, and he never talks down to us. He achieves unity between his objectives, his teaching methods and his assessment; and thus, to adapt his own phrase, he entraps the reader in a web of consistency that optimizes his or her own learning.

Perhaps not everyone will agree with Biggs's treatment of the academic differences between phenomenography and constructivism. I'm not sure I do myself. But does it matter? The author himself takes a pragmatic approach. In the daunting task that faces lecturers in responding to the pressures of mass higher education, reduced public funding, and students who are paying more for their education, the bottom line of engineering better learning outcomes matters more than nice theoretical distinctions.

Readers of the present book will especially enjoy its marvellous treatment of student assessment (particularly Chapters 3, 8 and 9).^{*} Biggs's most outstanding single contribution to education has been the creation of the Structure of the Observed Learning Outcome (SOLO) taxonomy. Rather than read about the extraordinary practical utility of this device in secondary sources, get it from the original here. From assessing clinical decision

^{*} This material is covered in Chapters 5, 9, 10 and 11 in the present edition.

making by medical students to classifying the outcomes of essays in history, SOLO remains the assessment apparatus of choice.

There are very few writers on the subject of university teaching who can engage a reader so personally, express doubts so clearly, relate research findings so eloquently to personal experience and open our eyes to the wonder around us. John Biggs is a rare thing: an author who has the humility born of generosity and intelligence to show us how he is still learning himself.

Paul Ramsden
Brisbane

Preface to third edition

It is very gratifying to discover that, since the second edition of this book, the concept of ‘constructive alignment’ has become part of the working theory not only of individual teachers, researchers and teaching developers, but has been implemented in many institutions and is now part of the language of quality assurance on a systemic basis. Google ‘constructive alignment’ and you now get over 24,000 references.

This upsurge of interest in constructive alignment is paralleled by that in outcomes-based education (OBE): this is not surprising, given that constructive alignment is itself one form of OBE. Unfortunately, there are other forms of OBE that have received a less than favourable press. To make sure we keep constructively aligned OBE quite separate from the others, we refer to ours as one instance of outcomes-based teaching and learning (OBTL). Our concern is *exclusively* with enhancing learning through quality teaching, not with managerialism, on the one hand, or with politically controversial school-based curricula, on the other. These tangled skeins are unravelled in Chapter 1.

However, this edition is not intended only for those interested in outcomes-based education. The major intention is as it has always been: to enhance teaching and learning through reflective practice using constructive alignment as the framework for reflection.

An important feature of this edition is that whereas in previous editions Catherine Tang was acknowledged as ‘a continuing source of inspiration’ to JB, she is now on board as co-author. While Catherine was head of staff development at the Hong Kong Polytechnic University (PolyU), she initiated an inter-institutional project implementing constructive alignment, funded by the University Grants Committee (UGC) of Hong Kong, resulting eventually in the PolyU adopting constructive alignment throughout the university. Then both of us were invited as consultants to the institution-wide implementation of OBTL, in the form of constructive alignment, at the City University of Hong Kong. This experience has taught us a great deal, not only about implementing constructive alignment in different disciplines in

individual classrooms, but also about the strategies – and the politics – of implementation on an institution-wide basis. The UGC is currently committed to bring outcomes-based education, of which constructive alignment is one example, to all eight Hong Kong tertiary institutions in due course.

The language of OBE has become widespread and for that reason, this edition uses that language consistently: for example, we now speak of ‘intended learning outcomes’ (ILOs), not ‘curriculum objectives’ as before. In fact, we are grateful for the reminder, because ‘curriculum objectives’ wasn’t quite the right term anyway, as we discuss in Chapter 5.

Our recent experience has also resulted in several changes from previous editions, apart from terminology. One is that we are concerned with implementation at the institutional level as well as in the classroom. What were in the previous edition special topics – large class teaching, using educational technology, teaching international students – are now dealt with as all part of designing and implementing constructively aligned teaching and assessment. Educational technology is now so much an integral part of university teaching that it should be treated as such, not as a special topic. And while international students undoubtedly have special needs with regard to provision for language and social support, when teaching is focused on students’ learning activities that are aligned to the intended outcomes of learning, the need to teach to presumed differences between students on the grounds of ethnicity disappears, as was made clear in the previous edition.

Another change is that, following our own hands-on experience with implementing constructive alignment, this edition is even more practically oriented than the last, aimed directly at practising teachers, staff developers and administrators. Readers looking for a comprehensive update of research into student learning will not find it here. We do, however, provide two or three tasks in every chapter, making some 28 tasks in all. Doing those tasks as you, the reader, progress will without doubt enhance your understanding of constructive alignment, but you may prefer to tackle those tasks if and when you are seriously attempting to implement constructive alignment in your own teaching. In that case, the tasks are virtually a ‘how-to’ manual. To emphasize that practical orientation, and to show that implementation is possible under a variety of conditions, the final chapter gives concrete examples of implementing constructive alignment on a faculty-wide basis and of recently constructively aligned curricula in various subjects. We also provide URLs for some excellent material that is ‘up there’ waiting to be accessed.

Finally, a further note on terminology. Many different terms are used to refer to degree programmes and the unit courses making up those programmes. Bachelor’s degree programmes we refer to as ‘programmes’, which some refer to as ‘courses’. The units of study that make up programmes we call ‘courses’, which others refer to as ‘units’, modules’ or ‘subjects’.

John Biggs, Catherine Tang
Hobart, Tasmania

Acknowledgements

As was stated in the acknowledgements in the first and second editions, there are many ideas in this book that came about through interacting with friends and colleagues over the years. These are not repeated here.

For this edition, we must mention Professor Richard Ho, for bringing us on board at the City University of Hong Kong, and Aman Shah, Tracy Lo, Roger Fung and Helen Mak, for expediting our work there. Others who have been directly helpful in providing stimulation, ideas and content for this edition are: Denise Chalmers, Catherine Chiu, Melanie Collier, Alan Dunnett, Mark Endean, Ron Kwok, David Johnston, Olivia Leung, Lawrence Li, Peter Looker, Janice McKay, Elaine Payne, Paul Ramsden, Paul Shin, Rosanne Taylor, Agnes Tiwari, Patrick Wong and Sandy Wong.

Finally, we must thank Katy Hamilton, Louise Caswell, Shona Mullen and Catriona Watson of McGraw-Hill/Open University Press who have seen us through this edition, patiently and helpfully.

John Biggs, Catherine Tang
Hobart, Tasmania

When you have read this book

When you have read this book you should be able to:

- 1 Explain to a colleague what ‘constructive alignment’ is and where it fits into other models of outcomes-based education.
- 2 Write a set of no more than five or six *intended learning outcomes*, each containing a key ‘learning verb’, for a semester-long course you are teaching.
- 3 Reflect on your current teaching using the constructive alignment framework and devise:
 - *teaching/learning activities* that address your intended learning outcomes and that activate those key verbs
 - *assessment tasks* that likewise address those key verbs
 - *rubrics* or criteria for assessment that enable judgments to be made as to how well your outcomes have been addressed.
- 4 Develop quality enhancement processes for your own teaching.
- 5 Identify quality assurance and enhancement processes within your institution that support the implementation of constructively aligned teaching.