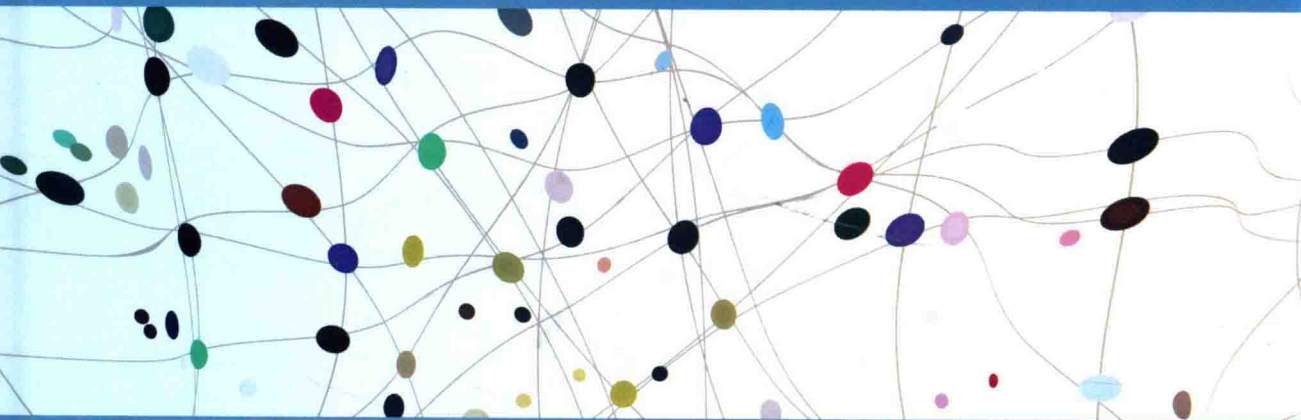


RESEARCH METHODS & METHODOLOGIES IN EDUCATION

2ND EDITION



EDITED BY

ROBERT COE, MICHAEL WARING, LARRY V. HEDGES & JAMES ARTHUR

companion
website 



RESEARCH METHODS & METHODOLOGIES IN EDUCATION

2ND EDITION



常州大学图书馆
藏书章

EDITED BY

ROBERT COE, MICHAEL WARING, LARRY V. HEDGES & JAMES ARTHUR

 SAGE

Los Angeles | London | New Delhi
Singapore | Washington DC | Melbourne



Los Angeles | London | New Delhi
Singapore | Washington DC | Melbourne

SAGE Publications Ltd
1 Oliver's Yard
55 City Road
London EC1Y 1SP

SAGE Publications Inc.
2455 Teller Road
Thousand Oaks, California 91320

SAGE Publications India Pvt Ltd
B 1/1 1 Mohan Cooperative Industrial Area
Mathura Road
New Delhi 110 044

SAGE Publications Asia-Pacific Pte Ltd
3 Church Street
#10-04 Samsung Hub
Singapore 049483

Editor: James Clark
Assistant editor: Robert Patterson
Production editor: Tom Bedford
Copyeditor: Aud Scriven
Proofreader: Elaine Leek
Indexer: Cathy Heath
Marketing manager: Lorna Patkai
Cover design: Sheila Tong
Typeset by: C&M Digitals (P) Ltd, Chennai, India
Printed and bound by
CPI Group (UK) Ltd, Croydon, CR0 4YY

© Editorial arrangement, Robert J. Coe, Michael Waring, Larry V. Hedges and James Arthur 2017

- | | |
|--|---|
| Ch1 © Robert J. Coe 2017 | Ch22 © Anita Gibbs 2017 |
| Ch2 © Robert J. Coe 2017 | Ch23 © Rhona Sharpe & Greg Benfield 2017 |
| Ch3 © Michael Waring 2017 | Ch24 © Eve Stirling 2017 |
| Ch4 © Larry V. Hedges 2017 | Ch25 © Gary McCulloch 2017 |
| Ch5 © Laura Day Ashley 2017 | Ch26 © Peter Tymms 2017 |
| Ch6 © Robert J. Coe 2017 | Ch27 © Ronald K. Hambleton & Lisa M. Lix 2017 |
| Ch7 © Martyn Hammersley 2017 | Ch28 © Graham R. Gibbs 2017 |
| Ch8 © Carol Munn-Giddings 2017 | Ch29 © Paul Connolly 2017 |
| Ch9 © Rob Walker 2017 | Ch30 © Elaine Vaughan 2017 |
| Ch10 © Ghazala Bhatti 2017 | Ch31 © Michael Atkinson 2017 |
| Ch11 © Claudia Mitchell 2017 | Ch32 © Michael Tedder 2017 |
| Ch12 © Michael Waring 2017 | Ch33 © Michael Borenstein 2017 |
| Ch13 © Laura Day Ashley 2017 | Ch34 © Harvey J. Keselman & Lisa Lix 2017 |
| Ch14 © Emma Smith 2017 | Ch35 © Stephen Gorard 2017 |
| Ch15 © Anna Vignoles 2017 | Ch36 © Michael Seltzer & Jordan Rickles 2017 |
| Ch16 © Stephen Gorard 2017 | Ch37 © Robert J. Coe 2017 |
| Ch17 © Steve Higgins 2017 | Ch38 © Larry V. Hedges 2017 |
| Ch18 © Peter Tymms 2017 | |
| Ch19 © Gert Biesta 2017 | |
| Ch20 © Carole Torgerson, Jill Hall & Kate Lewis-Light 2017 | |
| Ch21 © Carolyn L. Mears 2017 | |

First edition published in 2012 and reprinted in 2013 and 2015 (twice)

This second edition first published 2017

Apart from any fair dealing for the purposes of research or private study, or criticism or review, as permitted under the Copyright, Designs and Patents Act, 1988, this publication may be reproduced, stored or transmitted in any form, or by any means, only with the prior permission in writing of the publishers, or in the case of reprographic reproduction, in accordance with the terms of licences issued by the Copyright Licensing Agency. Enquiries concerning reproduction outside those terms should be sent to the publishers.

Library of Congress Control Number: 2016951255

British Library Cataloguing in Publication data

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

ISBN 978-1-4739-6979-7
ISBN 978-1-4739-6980-3 (pbk)

At SAGE we take sustainability seriously. Most of our products are printed in the UK using FSC papers and boards. When we print overseas we ensure sustainable papers are used as measured by the PREPS grading system. We undertake an annual audit to monitor our sustainability.

Praise for the first edition

RESEARCH METHODS & METHODOLOGIES IN EDUCATION

2ND EDITION



BY

ROBERT COE, MICHAEL WARING, LARRY V. HEDGES & JAMES ARTHUR

 SAGE

1000 BROADWAY, NEW YORK, NY 10018

Praise for the first edition

'A very detailed and comprehensive research methods book. Excellent for anyone interested in research methods in education'.

Dr Patricia Castanheira, School of Education, University of Brighton

'This work will be of immense value to those who are undertaking a significant postgraduate research study in education. The array of impressive contributors writes in an accessible and clear manner, and brings the attention of the reader to both technical and conceptual terms. This book certainly will be an addition to my own reference library'.

Susan Groundwater-Smith, Faculty of Education and Social Work, University of Sydney

'An excellent reference book with many good chapters on the research process accompanied with variety of methods and methodologies used in the field of educational research. I especially like the integrative approach undertaken, and I appreciate the many distinguished researchers who have contributed to this book'.

Professor Monica Rosén, Education, Gothenburg University

'This is an extremely thorough text that effectively covers the entire "Research Methods" course in Education. It is valuable for both PGCE students commencing their M-level study in education, as well as those continuing with their postgraduate degrees. Whilst it is a single text, it contains chapters from eminent authors across the field of education'.

Steve Watts, University of Sunderland

About the editors

and pedagogical and methodological approaches and
research into cultural, parenting and school factors.

Professor Robert J. Coe, Durham University, Professor of Education and Director of the Centre for Evaluation and Monitoring. His research interests include evaluation methodology, evidence-based education and the involvement of practitioners in research, school effectiveness and improvement, including the methodology of school effectiveness research, the use and effects of feedback especially in performance monitoring information systems, and the statistical comparability of examinations in different subjects and over time.

Dr Michael Waring, Director MSc Education (QTS) Physical Education, School of Sport, Exercise and Health Sciences, Loughborough University. He sits on the executive of the Society for Educational Studies, and is on the editorial board of the *British Journal of Educational Studies* and *Higher Education Pedagogies*. His research interests focus on the development of a personal learning styles pedagogy and the use of learning technologies as part of distance and blended learning in higher education and initial teacher education contexts. Generally and as part of the exploration of

Psychology. He is the author or co-author of nine books in the management and education areas, author of

this personalised learning agenda, he is interested in the use and innovative development of qualitative research methodology.

Professor Larry V. Hedges, Northwestern University, Professor of Statistics and Social Policy. A national leader in the fields of educational statistics and evaluation, his research is in the fields of sociology, psychology and educational policy. He is best known for his work to develop statistical methods for meta-analysis in the social, medical and biological sciences.

Professor James Arthur, Deputy Pro-Vice-Chancellor, Professor of Education and Civic Engagement, University of Birmingham. He is Director, Jubilee Centre for Character and Virtues, an inter-disciplinary research centre focusing on character, virtues and values in the interest of human flourishing. He has written widely on the relationship between theory and practice in education, particularly the links between communitarianism, social virtues, citizenship, religion and education. He is Secretary to the Society for Educational Studies.

Notes on the contributors

Dr Michael Atkinson, University of Toronto, Professor. He is co-editor of *Qualitative Research in Sport, Exercise and Health*, and past editor of the *Sociology of Sport Journal*. His research interests include health, youth masculinity, bioethics, violence, suffering, existentialism, and physical cultural studies.

Dr Greg Benfield (retired), formerly Oxford Brookes University, Educational Development Consultant. His work focused on supporting technology-enhanced learning. His research interests included learner experiences of technology-enhanced learning, computer-aided assessment, and computer-mediated communication in student group work.

Dr Ghazala Bhatti, Bath Spa University, Senior Lecturer at the Institute for Education. She is a founding member of the Network for Social Justice and Intercultural Education of the European Conference on Educational Research. Her research interests include social justice, ethnographic research, bilingualism in schools, comparative education research, and the educational achievements of children from minority ethnic backgrounds.

Professor Gert Biesta, Brunel University London, Professor of Education and Director of Research. He is associate editor of the journal *Educational Theory*. He conducts theoretical and empirical research on a range of topics, with a

particular interest in education, democracy and citizenship, and the theory and philosophy of educational and social research.

Michael Borenstein is a researcher who specialises in statistical power analysis and meta-analysis. He has been funded by the NIH and the IES in the United States for the purpose of developing computer programs for statistical power analysis and meta-analysis, and lectures widely on these topics.

Professor Paul Connolly, Queen's University Belfast, Dean of Research. He is Professor of Education and Dean of Research for the Faculty of Arts, Humanities and Social Sciences. He is also Director of the Centre for Evidence and Social Innovation (www.qub.ac.uk/cesi). His research interests include diversity and social inclusion in early childhood, early intervention and prevention, evaluations of social interventions, and evidence synthesis.

Dr Laura Day Ashley, University of Birmingham, Lecturer, School of Education. She has a background in social anthropology and education and a particular interest in international and historical approaches to the study of education. She teaches research methods, international education and the history of schooling, and supervises dissertations and theses at undergraduate, Master's and doctoral levels. She has led research on private school outreach in India (funded by the Economic and Social Research Council), private

and non-state schooling in developing countries (funded by the Department for International Development, UK), and Indian influences on progressive education in Britain in the early twentieth century (funded by the British Academy).

Dr Anita Gibbs, University of Otago, Associate Professor. She supervises postgraduate research related to social work research methods, disability and family practice areas. Her research interests are in mainstream, alternative and indigenous social work theories and methodologies, adoption and fostering, transcultural parenting, and fetal alcohol spectrum disorders.

Dr Graham R. Gibbs, University of Huddersfield, Reader in Research Methods. He is course coordinator for MSc-Social Research and Evaluation (Distance Learning) and is a National Teaching Fellow of the HEA. His research interests include the use of technology in teaching and learning and the use of computers in qualitative research. He has published on computer-assisted learning and qualitative data analysis and he currently runs a YouTube channel on research methods.

Professor Stephen Gorard, Professor of Education and Public Policy, Durham University. He is author of over 1,000 pieces, and has conducted studies of primary education, early childhood, secondary education, FE, HE, adult and continuing education, and informal learning in the home. His research approach is multi-method, combining large-scale surveys, focus group work, complex statistical modelling and historical archive analysis, among others. He is the editor of *Review of Education*, and author of *Research Design* (Sage, 2013).

Ms Jill Hall, University of Edinburgh, Research Fellow. She works as a Research Fellow in the Usher Institute of Population Health Sciences and Informatics, and has written and co-written numerous publications around her research interests in telehealth systems, complex wounds, patient involvement in patient safety, clinical trials in

fracture prevention and podiatry, and systematic reviews of the effectiveness of interventions.

Professor Ronald K. Hambleton, University of Massachusetts Amherst, Distinguished University Professor and Executive Director of the Center for Educational Assessment. He is a Fellow of Divisions 5 and 15 of the American Psychological Association (APA), a Fellow of the American Educational Research Association (AERA), and a Fellow of the International Association of Applied Psychology. He is the author or co-editor of nine books in the psychometric methods area, author or co-author of more than 700 research papers, and he has received several career achievement awards including awards from the National Council on Measurement in Education, the AERA, the APA, the International Test Commission, and the European Association of Methodology. He has been awarded honorary doctorates from the University of Umea in Sweden and the University of Oviedo in Spain.

Professor Martyn Hammersley, The Open University, Emeritus Professor of Educational and Social Research. He has carried out research in the sociology of education and studied the role of the media in reporting research findings. However, much of his work has been concerned with the methodological issues surrounding social enquiry. He has written several books, including (with Paul Atkinson) *Ethnography: Principles in Practice*, 3rd edition (Routledge, 2007) and (with Anna Traianou) *Ethics in Qualitative Research* (Sage, 2012).

Professor Steve Higgins, Durham University, Professor of Education. His research interests include the areas of effective use of digital technologies in schools, understanding how children's thinking and reasoning develop, and how teachers can be supported in developing the quality of teaching and learning in their classrooms. He has a particular interest in the use of evidence from education research to support improvement, and is the lead author of the *Sutton Trust-Education Endowment Foundation Teaching and Learning Toolkit*.

Professor Harvey J. Keselman, University of Manitoba, Professor of Psychology. He is Professor Emeritus in the Department of Psychology at the University of Manitoba. His current research program involves developing statistical tests that will be insensitive (robust) to non-normality and variance heterogeneity in independent and correlated groups designs. He would like to initiate in the future testing of social scientists' use of statistical tests to assess whether or not the effect of an experimental manipulation is significant.

Mrs Kate Lewis-Light, Information Specialist. She is an information specialist with over fifteen years' experience gained at the Centre for Reviews and Dissemination (CRD), University of York. At CRD she was responsible for contributing to systematic reviews, mainly through the design and running of complex search strategies. She also contributed to the production of CRD's DARE, HTA and PROSPERO databases, and taught on systematic review training courses run by CRD.

Dr Lisa M. Lix, University of Manitoba, Professor of Biostatistics. She is also a Manitoba Research Chair in the Department of Community Health Sciences at the University of Manitoba, Director of the Data Science Platform in the George and Fay Yee Centre for Healthcare Innovation, and Senior Scientist at the Manitoba Centre for Health Policy. Her research interests include analysis of longitudinal/repeated measures data, multivariate analyses of quality of life, risk prediction models, and behavioural health outcomes.

Professor Gary McCulloch, UCL Institute of Education, Brian Simon Professor of History of Education. He teaches History of Education and Research Methods. He is a member of advisory boards for *History of Education*, *History of Education Review*, *Journal of Educational Administration and History*. His research interests are in the history of education, including curriculum history, the history of secondary education, and documentary research methods. He is currently President-elect of the British Educational

Research Association and editor of the *British Journal of Educational Studies*.

Dr Carolyn L. Mears, University of Denver, Affiliated Faculty and Guest Lecturer. She holds a research appointment and is dissertation advisor and adjunct faculty at the University of Denver. She is a noted author, consultant, and speaker on issues related to trauma and crisis recovery. Her research interests include the effect of trauma on communities following mass casualty events and prevention of school violence. Her dissertation, 'Experiences of Columbine Parents', won the 2006 AERA Outstanding Dissertation of the Year Award for its innovative contributions to qualitative research practice. Her book *Reclaiming School in the Aftermath of Trauma* won the Colorado Book of the Year Award for anthology, and her text *Interviewing for Education and Social Science Research: The Gateway Approach* was a finalist for the AERA Outstanding Qualitative Book of the Year Award.

Professor Claudia Mitchell, McGill University, Professor of Education. She is a professor in the McGill University Department of Integrated Studies in Education. Her research interests include youth, gender and AIDS, visual and arts-based research methodologies, girls' education in development studies, and teacher identity.

Professor Carol Munn-Giddings, Anglia Ruskin University, Professor in the School of Education and Social Care. She joined ARU in 1995 after many years as a social researcher and research manager in various health and social services settings. Her research focuses on ways in which citizens and citizen groups with a direct experience of a health or social situation can inform the development of appropriate health and social care services.

Jordan Rickles, American Institutes for Research, Principal Researcher. He specialises in research design and quantitative methodology. His research explores the intersection of multilevel modelling, causal inference and propensity score

methods, with a particular interest in heterogeneity across educational settings.

Professor Michael Seltzer, University of California, Los Angeles. He is a Professor in the Advanced Quantitative Methods program in the Graduate School of Education and Information Studies at the University of California, Los Angeles. He specialises in multilevel modelling, particularly its use in multi-site evaluation studies and in analysing longitudinal data. A related facet of his work focuses on the use of Bayesian statistical approaches in specifying and estimating multilevel models in complex modelling settings.

Professor Rhona Sharpe, Oxford Brookes University, Head of Oxford Centre for Staff and Learning Development. She has directed a number of projects investigating learners' experiences of technology. These projects received national recognition in pioneering innovative research methods and techniques for eliciting students' expectations and experiences of using technology in their learning. The culmination of these projects was the creation of ELESIG – a special interest group for those interested in evaluations of learners' experiences of e-learning. Her interests in designing for learning and learner experience are well represented in two books co-edited with Helen Beetham: *Rethinking Pedagogy for a Digital Age*, 2nd edition (2013) and *Rethinking Learning for the Digital Age* (2010).

Professor Emma Smith, University of Leicester, Professor of Education. She researches issues of educational equity and the role that educational policy can play in reducing inequalities and closing achievement gaps in both the national and international context. Recent and on-going work has been in the following areas: shortages in the STEM workforce, special education and school accountability, inequalities in participation in post-compulsory science programmes, and school policy in England. She has a general interest in research methods and has led research methods courses at both undergraduate and postgraduate level. Her particular

area of interest is in the use of numeric secondary data, and she has co-edited the new two-volume BERA/Sage *Handbook of Education Research*.

Eve Stirling, Sheffield Institute of Art, Sheffield Hallam University, Senior Lecturer in Design. Her research interests include the use of social media within society and more specifically within higher education and the pedagogical impacts of this. She uses practice-based and visual research methods to explore the everyday lives of her participants.

Dr Michael Tedder, University of Exeter, Research Fellow. He has taught Liberal Studies and been responsible for teacher education for many years. His research interests include life history and biographical research, adult and community learning, the experiences of young people on vocational courses in FE, and notions of professionalism in post-compulsory education.

Professor Carole Torgerson, Durham University, Professor of Education. Previously, she held a Chair in Experimental Design at the University of Birmingham and a Readership in Evidence-based Education at the University of York. Her main methodological research interests are in experimental methods (randomised controlled trials and quasi-experiments) and research synthesis. She is particularly interested in applying methodological work in experimental research previously undertaken in the field of health care to the field of education.

Professor Peter Tymms PhD, Durham University. He is Director of the iPIPS project in the Centre for Evaluation and Monitoring and also part of the School of Education. He is a member of the Leibniz Institute for Educational Trajectories Scientific Advisory Board, the Sutton Trust's Education Advisory Group, the Advisory Board for The Learning & Psychology Centre, and an Academician of the Academy of Social Science. His main research interests include monitoring, assessment, performance indicators, ADHD, reading and research methodology.

Dr Elaine Vaughan, University of Limerick, Lecturer. She lectures in various areas of applied linguistics, and is programme director for the MA TESOL at the School of Modern Languages and Applied Linguistics. Her key areas of expertise are corpus-based discourse analysis, language teacher education, corpus linguistics, pragmatics, and Irish English. She has published on teacher professional talk in the workplace, the pragmatics of humour and laughter, teaching and learning in higher education, Irish English, and representations of Irish English in the media.

Anna Vignoles, University of Cambridge, Professor of Education and Director of Research at the Faculty of Education, and a trustee of the Nuffield Foundation. She has extensive experience of using large-scale administrative data to study factors relating to pupil

achievement and students' outcomes from education. She has published widely on widening participation into higher education and on the socio-economic gap in pupil achievement. Her research interests include issues pertaining to equity in education, school choice, school efficiency and finance, higher education, and the economic value of schooling.

Rob Walker, University of East Anglia, Professor of Education. He teaches and researches in the area of higher education practice, dealing both with the practicalities of day-to-day teaching in lecture theatres, seminars and on websites, and acknowledging the growing debates about research, teaching and curriculum in universities. He is a member of the Centre for Applied Research in Education (CARE) and also the Centre for Staff and Educational Development.

Acknowledgements

SAGE would like to thank the following people whose comments have helped to shape this new edition:

Jean Conteh, University of Leeds

Alaster Scott Douglas, University of Roehampton

Loes Houweling, University of Applied Sciences, Leiden

Rory du Plessis, University of Pretoria

Linzi McKerr, University of Worcester

Liane Purnell, Newman University

Ben Tan, Sheffield Hallam University

List of abbreviations

AIDS	acquired immune deficiency syndrome	ERIC	Education Resources Information Center
ANCOVA	analysis of covariance	ESDS	Economic and Social Data Service
ANOVA	analysis of variance	ESL	English as a Second Language
APA	American Psychological Association	ESRC	Economic and Social Research Council
AR	action research	FSM	free school meals
ASC	Annual Schools Census	GNVQ	General National Vocational Qualification
BECTA	British Educational Communications and Technology Agency	GPA	grade point average
BERA	British Educational Research Association	GPS	global positioning system
CA	conversation analysis	GT	grounded theory
CAQDAS	Computer-Assisted/Aided Qualitative Data Analysis	GTCE	General Teaching Council for England
CHASS	Council for Humanities, Arts and Social Sciences (Australia)	GTM	grounded theory method
CMC	computer-mediated communication	HE	higher education
CONSORT	Consolidated Standards of Reporting Trials	HEFCE	Higher Education Funding Council for England
CoPE	Certificate of Personal Effectiveness	HIV	human immunodeficiency virus
CPD	continuing professional development	HSB	High School and Beyond
CSDP	Comer's School Development Program	ICC	intra-class correlation
DCSF	Department for Children, Schools and Families	IDeA	Improvement and Development Agency
ECLS	Early Childhood Longitudinal Study	IEA	International Association for the Evaluation of Educational Achievement
Edna	Education Network Australia	IPRN	ITT Professional Resource Networks
ELESIG	Evaluation of Learners' Experiences of e-learning Special Interest Group	IRF	Initiation, Response, Feedback/Follow-up
EPPI	Centre Evidence for Policy and Practice Information and Co-ordinating Centre	ITT	initial teacher training
ERA	Excellence in Research for Australia	IWB	interactive whiteboard
		LTE	language teacher education
		NFER	National Foundation for Educational Research

NHST	null hypothesis significance testing	RDI	Researcher Development Initiative
OECD	Organisation for Economic Cooperation and Development	RSA	Royal Society of Arts
ONS	Office for National Statistics	SDM	standard mean deviation
PAR	participatory action research	SDQ	Strengths and Difficulties Questionnaire
PICOS	participants, interventions, outcomes, study designs	SES	socio-economic status
PISA	Programme for International Student Assessment	SETT	Self-Evaluation of Teacher Talk
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses Statement	SIVS	strategically important and vulnerable subject
QCA	Qualifications and Curriculum Authority	STEM	science, technology, engineering and mathematics
QCDA	Qualifications and Curriculum Development Agency	TDA	Training and Development Agency for Schools
QUOROM	Quality of Reporting of Meta-analyses	TESL	Teaching English as a Second Language
RAE	Research Assessment Framework	TM	Transition Mathematics
RCT	randomised controlled trial	UCAS	Universities Central Admissions Service
		VLE	virtual learning environment
		VSFG	very small focus group

Companion website



A companion website to the book can be found at <https://study.sagepub.com/coe2e>. This includes a range of free-to-access SAGE journal articles exemplifying the varied research methods and tools discussed in the book.

Contents

<i>List of figures and tables</i>	xvi
<i>About the editors</i>	xix
<i>Notes on the contributors</i>	xx
<i>Acknowledgements</i>	xxv
<i>List of abbreviations</i>	xxvi
1 Introduction – Robert J. Coe	1
Aim of the book	1
Structure of the book	1
Chapter features	2
What's new in the second edition?	2
Companion website	2
PART I INTRODUCTION TO RESEARCH METHODS AND METHODOLOGIES IN EDUCATION	3
2 The nature of educational research – Robert J. Coe	5
Introduction	5
Dimensions of difference: paradigms?	6
What is a paradigm?	7
Reconciling the different views	7
Different aims for educational research	8
Other ways of classifying different types of educational research	9
Characteristics of research	10
How is educational research different from other kinds of research?	11
Research quality	12
Questions for further investigation	13
Suggested further reading	13
References	13
3 Finding your theoretical position – Michael Waring	15
Introduction	15
Ontology, epistemology, methodology and methods	15

vi Contents

The nature of paradigms: making sense of reality	17
Conclusion	20
Questions for further investigation	20
Suggested further reading	20
References	20
PART II BASIC PRINCIPLES AND PRACTICE IN CONDUCTING RESEARCH	23
4 Design of empirical research – Larry V. Hedges	25
Introduction	25
Problem formulation	25
Logic of enquiry	26
Varieties of research designs	27
Validity considerations	30
Questions for further investigation	32
Suggested further reading	32
References	32
5 Planning your research – Laura Day Ashley	34
Why is planning important?	34
Starting to plan early on	34
Managing your time and resources	40
The research proposal or plan	41
Planning as an ongoing activity	42
Questions for further investigation	42
Suggested further reading	43
References	43
6 Inference and interpretation in research – Robert J. Coe	44
Introduction	44
Confusion over 'validity'	44
Interpretation claims	46
Transfer claims	51
Questions for further investigation	55
Suggested further reading	56
References	56
7 Research ethics – Martyn Hammersley	57
Introduction	57
What is ethics?	57
What is <i>research</i> ethics?	58
Ethical principles	59
Ethics in practice	64
Ethical regulation and ethics committees	65
Conclusion	66