

**RESEARCH
METHODS
IN
EDUCATION**

THIRD EDITION

**LOUIS COHEN
AND
LAWRENCE MANION**

Research Methods in Education

THIRD EDITION

Louis Cohen

and

Lawrence Manion



First published 1980
by Croom Helm Ltd.
Reprinted 1981, 1982 and 1984

Second edition 1985
Reprinted 1986 and 1987
Reprinted by Routledge 1989

Third edition published 1989
by Routledge
11 New Fetter Lane, London EC4P 4EE

Simultaneously published in the USA and Canada
by Routledge
a division of Routledge, Chapman and Hall, Inc.
29 West 35th Street, New York, NY 10001

Reprinted 1990

© 1980, 1985, 1989 Louis Cohen and Lawrence Manion

Typeset by Leaper & Gard Ltd, Bristol, England
Printed in Great Britain by
Mackays of Chatham PLC, Chatham, Kent

All rights reserved. No part of this book may be
reprinted or reproduced or utilized 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

Cohen, Louis, 1928-

Research methods in education. — 3rd ed.

1. Education. Research. Methodology

I. Title II. Manion, Lawrence

370'.7'8

ISBN 0-415-04410-3

Library of Congress Cataloging in Publication Data
has been applied for

List of Journals Abbreviated in Text

American Educational Research Journal
American Journal of Psychology
American Journal of Sociology
American Psychologist
Behaviour Research and Therapy
British Educational Research Journal
British Journal of Educational Psychology
British Journal of Medical Psychology
British Journal of Psychiatry
British Journal of Psychology
British Journal of Social and Clinical Psychology
Cambridge Journal of Education
Durham Research Review
Education
Education and Psychological Measurement
Educational Research
Educational Studies
Human Development
International Journal of Criminology and Penology
Journal of Child Psychology and Psychiatry
Journal of Educational Psychology
Journal of Educational Sociology
Journal of Experimental Education
Journal of Experimental Social Psychology
Journal of Personality and Social Psychology
Journal for the Theory of Social Behaviour
Perceptual and Motor Skills
Psychological Bulletin
Research in Education
Sagset Journal
Sociological Review
Sociology
Trends in Education

Authors' Note to the Third Edition

The opportunity afforded by our Publishers to make a number of additions and changes to the second edition of *Research Methods in Education* was too good to miss.

We have added new sections to several chapters and rewritten others. In particular, a section on *validity* has been added to Chapter 4 (*Surveys*), an outline of *meta-analysis in educational research* is included in Chapter 8 (*Experiments: Quasi-Experiments and Single-Case Research*) and a discussion of *discourse analysis* extends the Chapter on *Accounts* (Chapter 10).

In addition we have brought to readers' notice a range of recent research publications by updating the references and notes in most of the fifteen chapters that comprise the text.

Louis Cohen
Lawrence Manion

Acknowledgements

We should like to record our sincere thanks to colleagues at Loughborough University of Technology for their comments on initial drafts of several chapters and for their suggestions on a variety of materials for inclusion in the text. We are particularly grateful to Derek Blease, Keith Hodgkinson, Mike Holliday, Jim Hough, Morry van Ments, John Mundy, Alan Radley, Cyril Simmons, Don Smedley, John Thomas and Zena Stansbie. We should also like to thank Holt, Rinehart and Winston for permission to draw on Chapter One of *Perspectives on Classrooms and Schools* by the present authors.

Our special thanks go to Dora Durbidge for the indefatigable way in which she located sources of crucial information that otherwise would have escaped our notice.

Any omissions or mistakes we readily attribute to each other.

Our thanks are due to the following publishers and authors for permission to include materials in the text:

Wadsworth Publishing Co. Inc., Belmont, Calif. Notes in **Box 5.3**
p. 131 from Lofland, J., *Analysing Social Settings* (1971)

American Psychological Association, Washington D.C. **Box 6.4**
p. 172 from Eron, L.D. *et al.*, *American Psychologist* (April
1972) 253–63

Box 10.8 p. 257 from Forgas, J.P., *Journ. Pers. and Soc. Psychol.*,
34, 2 (1976) 199–209

Box 10.10 p. 259 from Peevers, B.H. and Secord, P.F., *Journ.*
Pers. and Soc. Psychol., 27, 1 (1973) 120–8

Open Books, London **Box 15.4** p. 366 from Bennett, N., *Teaching*
Styles and Pupil Progress (1975)

Box 5.4 pp. 132 and 133 from Rutter M. *et al.*, *Fifteen Thousand*
Hours (1979)

Box 2.1 p. 50 from Good, C.V., *Essentials of Educational*
Research (1963)

Academic Press, New York, N.Y. **Box 10.9** p. 258 from Forgas,
J.P., *Journ. Exp. Social Psychol.*, 14, (1978) 434–48

Associated Book Publishers Ltd., London **Box 14.3** p. 343 from
Fransella, F., *Need to Change?* (1975)

Box 12.4 p. 293 from Brown, R. and Herrnstein, R.J., *Psychology*
(1975)

Addison-Wesley Publishing Co., Reading, Mass. **Box 2.6** p. 63
from Holsti, O.R. in *The Handbook of Social Psychology, Vol.*
2, Research Methods (1968) 604

Routledge and Kegan Paul Ltd., London Words, pp. 79–85 and
Box 3.8 p. 89 from J. and E. Newson, in M.D. Shipman, *The*
Organisation and Impact of Social Research (1976)

Dr R. W. Shields, Box 5.10 p. 147

Harcourt Brace Jovanovich, Inc., New York, N.Y. **Box 6.2** p. 159
and **Box 13.1** p. 308 from Tuckman, B.W., *Conducting Edu-*
cational Research (1969)

C.B.S. International Publishing, New York, N.Y.

Acknowledgements

Box 5.8 p. 145 and **Box 5.9** p. 146 from Adams, R.S. and Biddle, B.J., *Realities of Teaching* (1970)

Box 4.4 p. 110 from Selltiz, C. *et al.*, *Research Methods in Social Relations* (1976)

Pergamon Press Ltd., Oxford **Box 14.4** p. 351 from Ravenette, A.T., *Journ. Child Psychol. and Psychiat.*, 16 (1975) 79–83

Weidenfeld Publishers Ltd., London **Box 5.6** p. 138, **Box 5.7** p. 140 and part of questionnaire pp. 138–9 from Lambert, R. *et al.*, *The Chance of Lifetime?* (1975) and Lambert, R. *et al.*, *A Manual to the Sociology of the School* (1970)

Harper and Row Publishers, London **Box 15.1** p. 361, **Box 15.2** p. 363, **Box 15.3** p. 364

National Foundation For Educational Research, Windsor **Box 3.5** p. 84, **Box 3.6** p. 85 from Jelinek, M.M. and Brittan, E.M., *Educational Research*, 18, 1 (1975) 44–53, and *Educational Research*, 19, 2(1977) 129–41

Box 10.14 p. 247 from McAleese, R. and Hamilton, D., *Understanding Classroom Life* (1978)

Methuen & Co., London Words from Shipman, M.D., *Inside a Curriculum Project* (1974)

Scottish Academic Press Ltd., Edinburgh **Box 15.5** p. 370, **Box 15.6** p. 371, **Box 15.7** p. 372 from Coulson, A.A., *British Journ. Educat. Psychol.*, 46 (1976) 244–52

Manchester University Press, Manchester **Box 7.3** p. 190 from Christie, T. and Oliver, R.A.C., *Research in Education*, 2 (1969) 13–31

The Open University, Milton Keynes Words from Pilliner, A., *Experiment in Educational Research*, E 341, Block 5 (1973)

Academic Press Inc. London **Box 14.2** p. 341 from Bannister, D. and Mair, J.M.M., *The Evaluation of Personal Constructs* (1968)

Hodder and Stoughton Educational, Sevenoaks **Box 9.1** p. 221, **Box 9.8** p. 223 from Butcher, H.J. and Pont, H.B., *Educational Research in Britain* 3 (1973)

Her Majesty's Stationery Office, London **Box 3.10** p. 91 from *Annexe I: D.E.S. A Study of School Buildings* (1977)

Countryside Commission, Cheltenham **Box 4.1** p. 98 from David-

Acknowledgements

son, J., *Outdoor Recreation Surveys: The Design and Use of Questionnaires for Site Surveys* (1970)

Heinemann Educational Books Ltd., London p. 111–13 and **Box 4.5** p. 115 from Hoinville, G. and Jowell, R., *Survey Research Practice* (1978)

Foreword

There are three common types of books on research methods. The first leads the reader through the stages of research as if there was a mechanical sequence that, if followed, arrives invariably at reliable and valid evidence. The second type supports one approach in opposition to others. Here the reader is made aware that there are a variety of approaches and that there is disagreement over their relative virtues. But there is still an attempt to sell one of many possible ways of collecting evidence. The third type of book introduces the reader to the variety of research methods without taking sides. In all three types of book, the intended audience is the minority who undertake research.

There are a few books of a fourth type which can introduce research methods not only to those who will become researchers, but to the majority who will use the evidence produced.

Louis Cohen and Lawrence Manion have added to the small number of books that can serve both researchers and consumers of research evidence. A wide range of methods used in education are presented and these include both traditional and more recent approaches. The book is striking for its breadth, wealth of examples and balanced content. This balance is obtained by describing the method, providing examples and commenting on strengths and weaknesses. It is written in an engagingly straightforward style. Above all, it should provide an excellent introduction to the rich variety on the research menu!

Marten Shipman
Professor of Education
University of Warwick

Contents

List of Boxes and Figures	xi
List of Journals Abbreviated in Text	xvi
Acknowledgements	xviii
Foreword: Professor Marten Shipman	xxii
1 Introduction: the Nature of Inquiry	1
The Search for Truth	1
Two Conceptions of Social Reality	6
Positivism	10
The Assumptions and Nature of Science	13
The Tools of Science	17
The Scientific Method	20
Criticisms of Positivism and the Scientific Method	23
Alternatives to Positivistic Social Science	27
Phenomenology, Ethnomethodology and Symbolic Interactionism	31
Criticisms of the Newer Perspectives	36
A Problem of Terminology: the Normative and Interpretive Paradigms	37
Methods and Methodology	41
Conclusion: the Role of Research in Education	42
2 Historical Research	47
Introduction	47
Choice of Subject	51
Data Collection	54
Evaluation	56
Writing the Research Report	59
The Use of Quantitative Methods	60
Examples of Historical Research in Education	63

3	Developmental Research	70
	Introduction	70
	The Terminology of Developmental Research	71
	Strengths and Weaknesses of Cohort and Cross-sectional Studies	72
	Strategies in Developmental Research	76
	Examples of Developmental Research	76
	Example 1: A Large-scale Cohort Study	76
	Example 2: A Small-scale Cohort Study	79
	Example 3: A Cross-sectional Study	81
	Example 4: A Cohort/Cross-sectional Design	87
	Example 5: A Trend or Prediction Study	90
4	Surveys	97
	Introduction	97
	Some Preliminary Considerations	99
	Survey Sampling	101
	Sample Size: an Overview	104
	Sampling Error	105
	Designing the Self-completion Questionnaire	106
	Postal Questionnaires	109
	Processing Survey Data	116
	Survey Research in Education: Two Examples	118
5	Case Studies	124
	Introduction	124
	The Case Study	124
	Why Participant Observation?	128
	Recording Observations	130
	Educational Case Study Examples	131
	Cell 1: Wolcott — The Man in the Principal's Office	134
	Cell 2: Lambert <i>et al.</i> — The Chance of a Lifetime?	137
	Cell 3: King — All Things Bright and Beautiful?	141
	Cell 4: Adams and Biddle — Realities of Teaching	143
	Cell 5: Shields — A Cure of Delinquents	146
	Cell 6: Weinreich — Cross-ethnic Identification and Self-rejection in a Black Adolescent	148
	Conclusion	151
6	Correlational Research	154
	Introduction	154

Characteristics	161
Occasions When Appropriate	164
Advantages and Disadvantages	165
Interpreting the Correlation Coefficient	166
Examples of Correlational Research	169
7 Ex Post Facto Research	176
Introduction	176
Characteristics of <i>Ex Post Facto</i> Research	179
Occasions When Appropriate	181
Advantages and Disadvantages	183
Designing an <i>Ex Post Facto</i> Investigation	184
Procedures in <i>Ex Post Facto</i> Research	186
Examples of <i>Ex Post Facto</i> Research	188
8 Experiments, Quasi-experiments and Single-case Research	193
Introduction	193
Designs in Educational Experimentation	194
A Pre-experimental Design: the One Group Pretest-Post-test	194
A 'True' Experimental Design: the Pretest-Post-test Control Group Design	196
A Quasi-experimental Design: the Non-equivalent Control Group Design	198
The Validity of Experiments	199
Threats to Internal Validity	200
Threats of External Validity	202
Procedures in Conducting Experimental Research	203
Examples from Educational Research	205
Example 1: A Pre-experimental Design	205
Example 2: A Quasi-experimental Design	207
Example 3: A 'True' Experimental Design	208
Single-case Research: ABAB Design	210
Meta-Analysis in Educational Research	212
9 Action Research	217
Introduction	217
Characteristics	223
Occasions when Action Research as a Method is Appropriate	226
Some Issues	228

Procedures	231
Conclusion: Examples of Action Research in School Contexts	234
10 Accounts	242
Introduction	242
The Ethogenic Approach	242
Characteristics of Accounts and Episodes	243
Procedures in Eliciting, Analysing and Authenticating Accounts: an Example	244
Qualitative Analysis of Accounts of Social Episodes: Further Examples	247
Network Analyses of Qualitative Data	251
What Makes a Good Network?	253
Discourse Analysis	253
Quantitative Analysis of Judgemental Ratings of Social Episodes	255
Account Gathering in Educational Research: Two Examples	261
Problems in Gathering and Analysing Accounts	265
Strengths of the Ethogenic Approach	266
11 Triangulation	269
Introduction	269
Types of Triangulation and Their Characteristics	272
Occasions When Triangulation is Particularly Appropriate	275
Some Issues and Problems	278
Procedures	281
Examples of the Use of Triangular Techniques in Educational Research	282
12 Role-playing	287
Introduction	287
Role-playing Versus Deception: the Argument	291
Role-playing Versus Deception: the Evidence	292
Role-playing in Educational Settings	296
The Uses of Role-playing	297
Strengths and Weaknesses of Role-playing and Other Simulation Exercises	301
Role-playing in an Educational Setting: an Example	302
Organising the Simulation Game	302

Evaluating Role-playing and other Simulation Exercises	304
13 The Interview	307
Introduction	307
Conceptions of the Interview	310
Some Features of the Research Interview	312
Some Problems Surrounding the Use of the Interview in Research	317
Procedures	320
Group Interviewing	324
The Non-directive Interview and the Focused Interview	324
Phenomenological Analysis of Interview Data	327
Conclusion: Examples of the Use of Interviewing in Research	333
14 Personal Constructs	336
Introduction	336
Characteristics of the Method	337
'Elicited' Versus 'Provided' Constructs	338
Allotting Elements To Constructs	340
Laddering	342
Grid Administration and Analysis	342
Procedures in Grid Administration	342
Procedures in Grid Analysis	343
Strengths of Repertory Grid Technique	347
Difficulties in the Use of Repertory Grid Technique	348
Some Examples of The Use of Repertory Grid in Educational Research	349
Recent Applications of Repertory Grid to Teaching and Learning	353
Grid Technique and Audio/Video Lesson Recording	355
15 Multidimensional Measurement	359
Introduction	359
Elementary Linkage Analysis: an Example	360
Steps in Elementary Linkage Analysis	362
Cluster Analysis: an Example	362
Factor Analysis: an Example	365
Multidimensional Tables	374
Multidimensional Data: Some Words on Notation	375

Degrees of Freedom	378
Bibliography	383
Index	401

List of Boxes and Figures

Boxes

1.1	The Subjective–Objective Dimension	9
1.2	Alternative Bases for Interpreting Social Reality	11
1.3	The Functions of Science	15
1.4	The Hypothesis	19
1.5	Stages in the Development of a Science	21
1.6	Does Watching Aggression on TV Cause Kids to Become Aggressive?	23
1.7	A Classroom Episode	29
1.8	An Account in Episode Analysis	30
1.9	Disrupting Social Order	34
1.10	Differing Approaches to the Study of Behaviour	40
2.1	Specific Competencies to be Developed through Instruction in the History of Education	50
2.2	Some Historical Interrelations Between Men, Movements and Institutions	50
2.3	An Example of a Historical Study in Education	53
2.4	A Brief Checklist of Some Dimensions of ‘Bias’	58
2.5	Criteria for Evaluating Historical Research	61
2.6	The Purposes of Content Analysis	63
2.7	Jan Kukielka, in America, to his Wife in Poland, December 30th, 1913	64
2.8	N’ach Levels in English Literature 1550–1800 Compared with Coal Imports into London Fifty Years Later	65
2.9	Silver Street Academy	66
2.10	Development of Teacher Education Courses for Women at University College, Cardiff	66
2.11	The Student Hostel	67