Contents

List of figures xiv			XiV	2	Mixe	ed methods research	31
List of tables xx			xvi		2.1	Introduction 31	
List of boxes xix			xix		2.2	What is mixed methods research? 32	
Lis	t of con	utributors	xxi		2.3	Why use mixed methods research? 33	
•			xxii		2.4	The foundations of mixed methods	
	-	dgements	XXV			research 34	
					2.5	Working with mixed methods	
						approaches 38	
PA	RT 1				2.6	Stages in mixed methods research 48	
Th	e conte	ext of educational research	1		2.7	Conclusion 48	
				3	Criti	ical educational research	51
1		nature of enquiry: setting the field	3		3.1	Critical theory and critical educational	
	1.1	Introduction 3				research 51	
	1.2	The search for understanding 3			3.2	Criticisms of approaches from critical	
	1.3	Conceptions of social reality 5				theory 54	
	1.4	Paradigms 8			3.3	Participatory research and critical	
	1.5	Positivism 10	10			theory 55	
	1.6	The assumptions and nature of scien	ice 10		3.4	Feminist research 58	
	1.7 1.8	The tools of science 12 The scientific method 13			3.5	A note on post-colonial theory and que	er
	1.8	Criticisms of positivism and the scientific	ntific			theory 63	
	1.9	method 14	mune		3.6	Value-neutrality in educational	
	1.10					research 63	
	1.11	•			3.7	A summary of three major paradigms	65
		post-positivist social science: natura	listic	4	The	ory in educational research	68
		and interpretive approaches 17			4.1	What is theory? 68	
	1.12	A question of terminology: the norm	native		4.2	Why have theory? 71	
		and interpretive paradigms 19			4.3	What makes a theory interesting? 71	
	1.13	Phenomenology, ethnomethodology	' ,		4.4	Types of theory 72	
		symbolic interactionism and			4.5	Where does theory come from? 76	
		constructionism 20			4.6	Questions about theory for researchers	77
	1.14				4.7	Conclusion 77	
		interpretive approaches 23		5	Eval	uation and research	79
	1.15	•	st	3	5.1	Similarities and differences between	19
		perspectives 24			J.1	research and evaluation 79	
	1.16	Subjectivity and objectivity in education	ational		5.2	Evaluation research and policy making	82
		research 25			5.3	Research, evaluation, politics and policy	
	1.17	The paradigm of complexity theory	27			making 83	,
	1.18	Conclusion 29					

The	search for causation	87	8	Ethic	s in Internet research	144
6.1	Introduction 87			8.1	What is Internet research? 144	
6.2	Causes and conditions 87			8.2	What are key ethical issues in Internet	
6.3	Causal inference and probabilistic				research? 144	
	causation 88			8.3	Informed consent 145	
6.4	Causation, explanation, prediction and			8.4	Public and private matters 146	
					•	
6.5						
		the				
6.7			9	Choo		153
				9.1	Introduction 153	
6.8				9.2	What gives rise to the research	
					project? 153	
0.,				9.3		
6 10				9.4	The purposes of the research 157	
				9.5	Ensuring that the research can be	
					conducted 158	
				9.6	Considering research questions 160	
0.15	Conclusion 107			9.7	The literature search and review 161	
				9.8	Summary of key issues in choosing a	
RT 2					research topic or project 162	
earch	design	109	10	Resea	rch questions	165
	-	.00	10			103
The e	thics of educational and social					
resea	rch	111		10.2	•	
7.1	Introduction 111			10.3		
7.2	Ethical principles and the nature of ethi	cs		10.5		
	in educational research 112			104		,
7.3	Sponsored research 114					
7.4	Regulatory contexts of ethics 115			10.5		
7.5	Choice of research topic and research			10.6		
	design 120			10.0		
7.6	Informed consent 122			10.7		
7.7	Non-maleficence, beneficence and hum	an		10.7	A illiai tilought 1/2	
	dignity 127		11	Resea	rch design and planning	173
7.8	Privacy 128			11.1	Introduction 173	
7.9	Anonymity 129			11.2	Approaching research planning 174	
7.10	Confidentiality 130			11.3	Research design and methodology 175	
7.11	Against privacy, confidentiality and			11.4	From design to operational planning 17	7
				11.5	A framework for planning research 177	,
7.12				11.6	Conducting and reporting a literature	
7.13					review 181	
	•			11.7	Searching for literature on the Internet	183
7.14	_			11.8		
	•					
				11.9		
		39			methodologies 186	
				11 10	•	
7.10	ixesponsioning to sponsors, authors and	u		11.10	Data aliatysis 100	
7.10	the research community 141	u			Presenting and reporting the results 186	5
	6.1 6.2 6.3 6.4 6.5 6.6 6.7 6.8 6.9 6.10 6.11 6.12 6.13 RT 2 search The eresear 7.1 7.2 7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10 7.11 7.12 7.13 7.14 7.15 7.16 7.17	6.2 Causes and conditions 87 6.3 Causal inference and probabilistic causation 88 6.4 Causation, explanation, prediction and correlation 92 6.5 Causal over-determination 94 6.6 The timing and scope of the cause and effect 95 6.7 Causal direction, directness and indirectness 96 6.8 Establishing causation 96 6.9 The role of action narratives in causation 98 6.10 Researching causes and effects 99 6.11 Researching the effects of causes 101 6.12 Researching the causes of effects 103 6.13 Conclusion 107 RT 2 Search design The ethics of educational and social research 7.1 Introduction 111 7.2 Ethical principles and the nature of ethi in educational research 112 7.3 Sponsored research 114 7.4 Regulatory contexts of ethics 115 7.5 Choice of research topic and research design 120 7.6 Informed consent 122 7.7 Non-maleficence, beneficence and hum dignity 127 7.8 Privacy 128 7.9 Anonymity 129 7.10 Confidentiality 130 7.11 Against privacy, confidentiality and anonymity 130 7.12 Deception 132 7.13 Gaining access and acceptance into the research setting 134 7.14 Power and position 136 7.15 Reciprocity 137 7.16 Ethics in data analysis 137 7.17 Ethics in reporting and dissemination 1	6.1 Introduction 87 6.2 Causes and conditions 87 6.3 Causal inference and probabilistic causation 88 6.4 Causation, explanation, prediction and correlation 92 6.5 Causal over-determination 94 6.6 The timing and scope of the cause and the effect 95 6.7 Causal direction, directness and indirectness 96 6.8 Establishing causation 96 6.9 The role of action narratives in causation 98 6.10 Researching causes and effects 99 6.11 Researching the effects of causes 101 6.12 Researching the causes of effects 103 6.13 Conclusion 107 RT 2 Search design 109 The ethics of educational and social research 111 7.2 Ethical principles and the nature of ethics in educational research 112 7.3 Sponsored research 114 7.4 Regulatory contexts of ethics 115 7.5 Choice of research topic and research design 120 7.6 Informed consent 122 7.7 Non-maleficence, beneficence and human dignity 127 7.8 Privacy 128 7.9 Anonymity 129 7.10 Confidentiality 130 7.11 Against privacy, confidentiality and anonymity 130 7.12 Deception 132 7.13 Gaining access and acceptance into the research setting 134 7.14 Power and position 136 7.15 Reciprocity 137 7.16 Ethics in data analysis 137 7.17 Ethics in reporting and dissemination 139	6.1 Introduction 87 6.2 Causes and conditions 87 6.3 Causal inference and probabilistic causation 88 6.4 Causation, explanation, prediction and correlation 92 6.5 Causal over-determination 94 6.6 The timing and scope of the cause and the effect 95 6.7 Causal direction, directness and indirectness 96 6.8 Establishing causation 96 6.9 The role of action narratives in causation 98 6.10 Researching causes and effects 99 6.11 Researching the effects of causes 101 6.12 Researching the causes of effects 103 6.13 Conclusion 107 RT 2 Search design 109 10 The ethics of educational and social research 111 7.1 Introduction 111 7.2 Ethical principles and the nature of ethics in educational research 112 7.3 Sponsored research 114 7.4 Regulatory contexts of ethics 115 7.5 Choice of research topic and research design 120 7.6 Informed consent 122 7.7 Non-maleficence, beneficence and human dignity 127 7.8 Privacy 128 7.9 Anonymity 129 7.10 Confidentiality 130 7.11 Against privacy, confidentiality and anonymity 130 7.12 Deception 132 7.13 Gaining access and acceptance into the research setting 134 7.14 Power and position 136 7.15 Reciprocity 137 7.16 Ethics in data analysis 137 7.17 Ethics in reporting and dissemination 139	6.1 Introduction 87 6.2 Causes and conditions 87 6.3 Causal inference and probabilistic causation 88 6.4 Causation, explanation, prediction and correlation 92 6.5 Causal over-determination 94 6.6 The timing and scope of the cause and the effect 95 6.7 Causal direction, directness and indirectness 96 6.8 Establishing causation 96 6.9 The role of action narratives in causation 98 6.10 Researching the effects of causes 101 6.12 Researching the effects of causes 101 6.13 Conclusion 107 RRT 2 Search design The ethics of educational and social research	6.1 Introduction 87 6.2 Causes and conditions 87 6.3 Causal inference and probabilistic causation 88 6.4 Causation, explanation, prediction and correlation 92 6.5 Causal over-determination 94 6.6 The timing and scope of the cause and the effect 95 6.7 Causal direction, directness and indirectness 96 6.8 Establishing causation 96 6.9 The role of action narratives in causation 98 6.10 Researching the effects of causes 101 6.11 Researching the effects of causes 101 6.12 Researching the effects of causes 101 6.13 Conclusion 107 6.16 Conclusion 107 6.17 Researching the effects of causes 101 6.18 RT 2 RT 2 RT 2 RT 2 RT 2 RT 4 RT 2 RT 4 Regulatory contexts of ethics 115 7.5 Choice of research 114 7.4 Regulatory contexts of ethics 115 7.5 Choice of research 102 7.6 Informed consent 122 7.7 Non-maleficence, beneficence and human dignity 127 7.8 Privacy 128 7.9 Anonymity 129 7.10 Confidentiality 130 7.11 Against privacy, confidentiality and anonymity 130 6.12 Ginling access and acceptance into the research sesting 134 7.14 Power and position 136 7.15 Reciprocity 137 7.16 Ethics in data analysis 137 8.1 What is Intermet research? 144 8.2 What are key ethical issues in Intermet research? 144 8.3 Informed consent 145 8.4 Public and private matters 146 8.5 Confidentiality and anonymity 148 8.5 Confidentiality and anonymity 148 8.6 Ethical codes for Internet research 149 7. Conclusion 153 7. Ensuring that the research project? 153 7. Ensuring that the research can be conducted 158 7. Ensuring that the research questions 160 7. Ensuring that the research questions? 165 7. Ensuring that the research questions? 165 7. Ensuring that the research and review 161 7.1 Introduction 111 7.2 Ethical principles and the nature of ethics in educational research 112 7.3 Sponsored research 112 7.4 Regulatory contexts of ethics 115 7.5 Choice of research 122 7.6 Informed consent 122 7.7 Non-maleficence, beneficence and human dignity 127 7. Non-maleficence, beneficence and human dignity 127 7. Non-maleficence, beneficence and human di

	11.13 Managing the planning of research 19411.14 A worked example 19611.15 Ensuring quality in the planning of			PART 3					
				Methodologies for educational research 2					
	11115	research 201	15	Quali	tative, naturalistic and				
12	12.2 12.3 12.4 12.5 12.6 12.7 12.8 12.9 12.10 12.11 12.12	Introduction 202 The sample size 203 Sampling error 209 Statistical power and sample size 211 The representativeness of the sample 212 The access to the sample 213 The sampling strategy to be used 214 Probability samples 214 Non-probability samples 217 Sampling in qualitative research 223 Sampling in mixed methods research 224 Planning a sampling strategy 225 Conclusion 226		ethno 15.1 15.2 15.3 15.4 15.5 15.6 15.7 15.8	graphic research Foundations of qualitative, naturalistic and ethnographic inquiry 288 Naturalistic research 292 Ethnographic research 292 Critical ethnography 294 Autoethnography 297 Virtual ethnography 299 Phenomenological research 300 Planning qualitative, naturalistic and ethnographic research 301	287			
13		tive educational research 228 Introduction 228			approaches 320				
	13.2	What is sensitive research? 228 Sampling and access 230	16		rical and documentary research	323			
		Ethical issues in sensitive research 233		16.1	Introduction 323				
		Effects of sensitive research on the researcher 236		16.2	Some preliminary considerations: theo and method 323	ry			
		Researching powerful people 237 Researching powerless and vulnerable		16.3	The requirements and process of documentary analysis 325				
		people 240		16.4	Some problems surrounding the use of	•			
		Asking questions 242 Conclusion 243		16.5	documentary sources 325 The voice of the past: whose account				
14	14.1	ity and reliability 245 Defining validity 245		16.6	counts? 326 A worked example: a biographical approach to the history of education 33	28			
		Validity in quantitative research 246 Validity in qualitative research 247		16.7		20			
	14.4	Validity in mixed methods research 250	17	Surve	ys, longitudinal, cross-sectional and				
		Types of validity 252		trend	studies	334			
		Triangulation 265			Introduction 334				
	14.7	Ensuring validity 267		17.2	What is a survey? 334				
	14.8	Reliability 268		17.3	Advantages of surveys 334				
	14.9	Reliability in quantitative research 268		17.4	Some preliminary considerations 336				
		Reliability in qualitative research 270		17.5	Planning and designing a survey 337				
		Validity and reliability in interviews 271		17.6	Survey questions 340				
		Validity and reliability in experiments 276		17.7	Low response, non-response and missi	ng			
	14.13	Validity and reliability in questionnaires 277		17.8	data 341 Survey sampling 345				
	14.14	Validity and reliability in observations 278		17.9	Longitudinal and cross-sectional				
		Validity and reliability in tests 279		•	surveys 347				
		Validity and reliability in life histories 283		17.10	Strengths and weaknesses of longitudin	nal.			
		Validity and reliability in case studies 284			cohort and cross-sectional studies 349				

	17.11	Postal, interview and telephone	21		-analysis, systematic reviews and	425
	17.10	surveys 352			rch syntheses	427
	17.12	Comparing methods of data collection in surveys 357		HARSH	I SURI	
		Surveys 337			Introduction 427	
18	Inter	net surveys 361		21.2	Meta-analysis 428	
	18.1	Introduction 361		21.3	Systematic reviews 430	
	18.2	Advantages of Internet surveys 361		21.4	Methodologically inclusive research	
	18.3	Disadvantages of Internet surveys 362			syntheses 431	
	18.4	Constructing Internet-based surveys 363		21.5	Conclusion 439	
	18.5	Ethical issues in Internet-based	22	Actio	n research	440
		surveys 367	~~	22.1	Introduction 440	110
	18.6	Sampling in Internet-based surveys 372		22.2	Defining action research 441	
	18.7	Improving response rates in Internet surveys 372		22.3	Principles and characteristics of action research 443	
	18.8	Technological advances 374		22.4	Participatory action research 444	
10	C	-A 4: 275			Action research as critical praxis 445	
19		studies 375			Action research and complexity theory	448
		What is a case study? 375			Procedures for action research 448	770
	19.2	Types of case study 377			Reporting action research 452	
	19.3	Advantages and disadvantages of case			Reflexivity in action research 453	
	10.4	study 378			Ethical issues in action research 454	
	19.4 19.5	Generalization in case study 380			Some practical and theoretical matters	454
	19.5	Reliability and validity in case studies 381 Planning a case study 382			Conclusion 456	
	19.0	Case study design and methodology 384			•	
	19.7	Sampling in case studies 386	23		al worlds, social network software	
	19.9	Data in case studies 387		and n	etography in educational research	457
		Writing up a case study 388		STEWA	ART MARTIN	
		What makes a good case study		23.1	Introduction 457	
	17.11	researcher? 389		23.2	Key features of virtual worlds 457	
	19 12	Conclusion 390		23.3	Social network software 458	
	17.12			23.4	Using virtual worlds and social media i	in
20		riments 391			educational research 458	
		Introduction 391		23.5	Netography, virtual worlds and social	
					media network software 459	
	20.3	Designs in educational experiments 401		23.6	Opportunities for research with virtual	
	20.4	True experimental designs 402			worlds, social network software and	
	20.5	Quasi-experimental designs 406			netography 461	
	20.6	Single-case ABAB design 408		23.7	Ethics 463	
	20.7	Procedures in conducting experimental		23.8	Guidelines for practice 464	
		research 409		23.9	Data 465	
	20.8	Threats to internal and external validity in experiments 411		23.10	Conclusion 467	
	20.9	•				
		test 412	PA	RT 4		
	20.10	The design experiment 413	Mo	thode :	of data collection	469
	20.11	Internet-based experiments 415	ME	mous (or data concention	703
	20.12	Ex post facto research 418	24	Quest	tionnaires	471
	20.13	Conclusion 425		24.1	Introduction 471	
				24.2	Ethical issues 471	
				24.3	Planning the questionnaire 472	

		Types of questionnaire items 475		26.12	Reliability and validity in	
		Asking sensitive questions 489			observations 560	
	24.6	Avoiding pitfalls in question writing 490		26.13	Conclusion 562	
		Sequencing questions 492	25	Tr 4 .		=(2
	24.8	Questionnaires containing few verbal	27			563
		items 493		27.1	Introduction 563	
	24.9	The layout of the questionnaire 493		27.2	-	
	24.10	Covering letters/sheets and follow-up		27.3	Parametric and non-parametric tests 565)
		letters 495		27.4		
	24.11	Piloting the questionnaire 496		27.5	Norm-referenced, criterion-referenced ar	nd
	24.12	Practical considerations in questionnaire			domain-referenced tests 565	
		design 498		27.6	Commercially produced tests and	
	24.13	Administering questionnaires 501			researcher-produced tests 567	
		Processing questionnaire data 504		27.7	Constructing and validating a test 568	
		3 1		27.8	Software for preparation of a test 583	
25	Interv	views 50	6	27.9	U 1	
	25.1	Introduction 506		27.10	Ethical issues in testing 584	
	25.2	Conceptions of the interview 507		27.11	Computerized adaptive testing 585	
	25.3	Purposes of the interview 508				
		Types of interview 508	28		secondary data in educational	
		Planning and conducting interviews 512		resea		586
	25.6	Group interviewing 527		28.1		_
		Interviewing children 528			Advantages of using secondary data 587	
	25.8	Interviewing minority and marginalized		28.3		
		people 531		28.4	Ethical issues in using secondary	
	25.9	Focus groups 532			data 589	_
		Non-directive, focused, problem-centred		28.5	Examples of secondary data analysis 58	9
		and in-depth interviews 533		28.6	Working with secondary data 589	
	25.11	Telephone interviewing 535		28.7	Conclusion 592	
		Online interviewing 538	20	D		593
		Ethical issues in interviewing 540	29			373
		Č		RICHA	RD BELL	
26	Obser	vation 54	2	29.1	Introduction 593	
	26.1	Introduction 542		29.2	Strengths of repertory grid technique 59)4
	26.2	Structured observation 545		29.3	Working with personal constructs 595	
	26.3	The need to practise structured		29.4	Grid analysis 599	
		observation 550		29.5	Some examples of the use of the repertor	ry
	26.4	Analysing data from structured			grid in educational research 600	
		observations 550		29.6	Competing demands in the use of the	
	26.5	Critical incidents 551			repertory grid technique in research 604	ļ
		Naturalistic and participant		29.7	Resources 605	
		observation 551				
	26.7	Data analysis for unstructured observations	_s 30		[]	6 06
		and videos 555		CARM	EL O'SULLIVAN	
	26.8	Natural and artificial settings for		30.1	Introduction 606	
	• -	observation 555		30.2	Role-play pedagogy 607	
	26.9			30.3	What is role-play? 608	
		Timing and causality with observational		30.4	Why use role-play in research? 610	
		data 558		30.5	Issues to be aware of when using role-	
	26.11	Ethical considerations in			play 612	
	••	observations 558		30.6	• •	

	30.7	Role-play as a research method: special features 616		35.2 35.3	A conversational analysis 688 Narrative analysis 694	
	30.8 30.9	A note of caution 617 How does role-play work? 617		35.4 35.5	Autobiography 698 Conclusion 700	
	30.10	Strategies for successful role-play 618 Examples of research using role-play 623	36		sing visual media	702
		A note on simulations 626			Introduction 702	
	30.12	A note on simulations 626		36.2	Content analysis 704	
31	Visua	al media in educational research 628		36.3	Discourse analysis 705	
	31.1	Introduction 628			Grounded theory 706	
	31.2	Who provides the images? 630			Interpreting images 707	
	31.3	Photo-elicitation 630		36.6	Interpreting an image: a worked	
		Video and moving images 633			example 708	
		Artefacts 634		36.7	Analysing moving images 712	
	31.6	Ethical practices in visual research 636		36.8	Conclusion 713	
			37		nded theory	714
ъ.	DT 6				Introduction 714	
PA	RT 5				Versions of grounded theory 715	
Dat	a anal	ysis and reporting 641		37.3	Stages in generating a grounded theory	y 717
					The tools of grounded theory 717	•••
32		oaches to qualitative data analysis 643		37.5	The strength of the grounded theory 7	/21
	32.1	Elements of qualitative data analysis 643		37.6	Evaluating grounded theory 721	700
	32.2	Data analysis, thick description and reflexivity 647		37.7	Preparing to work in grounded theory	
	32.3	Ethics in qualitative data analysis 650		37.8	Some concerns about grounded theory	122
	32.4	Computer assisted qualitative data analysis	38	Appro	oaches to quantitative data analysis	725
	32.4	(CAQDAS) 650		38.1	Introduction 725	
				38.2	Scales of data 725	
33	Orga	nizing and presenting qualitative			Parametric and non-parametric data 7	
	data	657		38.4	Descriptive and inferential statistics 7	27
	33.1	Tabulating data 657			Kinds of variables 728	
	33.2	Ten ways of organizing and presenting			Hypotheses 730	
	22.2	data analysis 661		38.7		
	33.3	Narrative and biographical approaches to			Confidence intervals 733	
	22.4	data analysis 664			Distributions 733	
	33.4 33.5	Systematic approaches to data analysis 665 Methodological tools for analysing		38.10	Conclusion 737	
	33.3	qualitative data 666	39		tical significance, effect size and	
					ical power	739
34		ig and content analysis 668			Introduction 739	
	34.1	Introduction 668			Statistical significance 739	
	34.2	Coding 668		39.3	Concerns about statistical significance	
	34.3	Concerns about coding 673		39.4	Hypothesis testing and null hypothesis	3
	34.4	What is content analysis? 674		20.5	significance testing 744	
	34.5	How does content analysis work? 675		39.5	Effect size 745	
	34.6 34.7	A worked example of content analysis 680 Reliability in content analysis 684		39.6	Statistical power 749 Conclusion 752	
				39.7	Conclusion 732	
35		urses: conversations, narratives and	40		iptive statistics	753
		iographies as texts 686		40.1		
	35.1	Discourse analysis and critical discourse		40.2	Frequencies, percentages and	
		analysis 686			crosstabulations 754	

	40.3	Measures of central tendency and dispersal 762			43.2	What to look for in factor analysis output 826	
	40.4	Taking stock 765			43.3	Cluster analysis 828	
	40.5	Correlations and measures of association 765			43.4	A note on structural equation modelling 833	
		Partial correlations 772			43.5	-	
	40.7	Reliability 774		44	Choo	sing a statistical test	839
41	Infer	ential statistics: difference tests	7 76		44.1	Introduction 839	
	41.1	Measures of difference between			44.2	Sampling issues 839	
		groups 776			44.3	The types of data used 841	
	41.2	The t-test 777			44.4	8	
		Analysis of Variance 781			44.5	Assumptions of tests 841	
		The chi-square test 789		45	Royo	nd mixed methods: using Qualitative	
		Degrees of freedom 792		45	-	parative Analysis (QCA) to integrate	
	41.6	The Mann-Whitney and Wilcoxon tests 794				-case and within-case analyses	847
	41.7	The Kruskal-Wallis and Friedman			BARR'	Y COOPER AND JUDITH GLAESSER	
		tests 797			45.1	Introduction 847	
	41.8	Conclusion 801			45.2	1	
42	Inferential statistics: regression analysis and standardization		802		45.3 45.4	· · · · · · · · · · · · · · · · · · ·	0
		Regression analysis 802	002			(QCA) 850	
		Simple linear regression 803			45.5	QCA: sufficiency 852	
		Multiple regression 805			45.6	Conclusion 853	
		Standardized scores 814		Bib	liograj	phy	855
	42.5	Conclusion 817		Ind	0 1		907
43	Facto	or analysis, cluster analysis and					
		tural equation modelling Conducting factor analysis 818	818				
	43.1	Conducting factor analysis 818					