

INNOVATION IN MIXED METHODS RESEARCH

Sara Miller McCune founded SAGE Publishing in 1965 to support the dissemination of usable knowledge and educate a global community. SAGE publishes more than 1000 journals and over 800 new books each year, spanning a wide range of subject areas. Our growing selection of library products includes archives, data, case studies and video. SAGE remains majority owned by our founder and after her lifetime will become owned by a charitable trust that secures the company's continued independence.

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

INNOVATION IN MIXED METHODS RESEARCH

Cheryl N. Poth

A Practical Guide to
Integrative Thinking
with Complexity

 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: Aly Owen
Assistant editor: Charlotte Bush
Production editor: Ian Antcliff
Copyeditor: Richard Leigh
Proofreader: Chris Bitten
Indexer: Martin Hargreaves
Marketing manager: Susheel Gokarakonda
Cover design: Shaun Mercier
Typeset by: C&M Digital (P) Ltd, Chennai, India
Printed in the UK

© Cheryl N. Poth 2018

First published 2018

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: 2018938197

British Library Cataloguing in Publication data

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

ISBN 978-1-4739-0668-6
ISBN 978-1-4739-0669-3 (pbk)

At SAGE we take sustainability seriously. Most of our products are printed in the UK using responsibly sourced 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.

To my husband, Damian J. Rogers.

Without his love, patience, and support during the writing of this book and in life, none of this would be possible.



CONTENTS

Detailed Contents	ix
List of Tables	xv
List of Figures	xviii
List of Researcher Spotlights	xx
List of Practice Alerts	xxii
List of Guiding Tips	xxiv
Pedagogical Guide	xxvi
Online Resources	xxvii
Preface	xxviii
About the Author	xxx
Acknowledgements	xxxii
Part I Getting Started with Essential Foundations	xxxiv
1 Embracing Complexity in Mixed Methods Research	2
2 Positioning Demand for Innovation in Mixed Methods Research	24
3 Advancing Integrative Thinking with Complexity in Mixed Methods Research	54
Part II Realizing Innovation in Guiding Practices	78
4 Diagnosing Complexity of Mixed Methods Research Conditions	80
5 Framing Intentions of Complex Mixed Methods Research Problems	114

6	Defining Systems of Complex Mixed Methods Research Contexts	140
7	Describing Designs of Complex Mixed Methods Research Integrations	170
8	Developing Capacity of Complex Mixed Methods Research Interactions	204
9	Generating Evidence of Complex Mixed Methods Research Outcomes	236
	Part III Onward Considerations for Adaptive Practices	284
10	Realizing Complexity-Sensitive Mixed Methods Research	286
	Appendix A: An Annotated Glossary of Terms	302
	Appendix B: Templates for Research Practice Innovations	310
	Appendix C: Biographies of Researcher Spotlight Contributors	320
	References	328
	Index	337

DETAILED CONTENTS

List of Tables	xv
List of Figures	xviii
List of Researcher Spotlights	xx
List of Practice Alerts	xxii
List of Guiding Tips	xxiv
Pedagogical Guide	xxvi
Online Resources	xxvii
Preface	xxviii
About the Author	xxx
Acknowledgements	xxxii
Part I Getting Started with Essential Foundations	xxxiv
1 Embracing Complexity in Mixed Methods Research	2
Key Chapter Questions	4
New Chapter Terms	4
Purpose and Need for the Book	8
Positioning Myself	10
Defining Conditions of Complexity and Innovations for Practice	12
Continuum of Complexity Conditions	13
<i>Niche for Complexity-Sensitive Approach</i>	16
Audiences for the Book	17
Organization and Learning Features	18
Selection of Six Featured Mixed Methods Studies	19
Chapter Check-In	21

Key Chapter Concepts	22
Further Readings	22
2 Positioning Demand for Innovation in Mixed Methods Research	24
Key Chapter Questions	26
New Chapter Terms	26
Why Use Mixed Methods Research?	27
<i>Enhanced Advocacy of the Value and Contributions</i>	27
<i>Improved Access to Learning and Mentor Opportunities</i>	29
<i>Continuing Advances in Guiding Practices and Techniques</i>	31
What Distinguishes Mixed Methods Research?	33
<i>Essential Characteristics</i>	35
<i>Suitable Problems</i>	36
<i>Organic Processes</i>	40
<i>Researcher Roles</i>	43
Key Practice Dilemmas under Highly Complex Conditions	46
Demand for Innovations and Innovators in Mixed Methods Research	47
Survey of Six Featured Mixed Methods Studies	49
Chapter Check-In	50
Key Chapter Concepts	50
Further Readings	51
3 Advancing Integrative Thinking with Complexity in Mixed Methods Research	54
Key Chapter Questions	56
New Chapter Terms	56
Why Integrative Thinking with Complexity in Mixed Methods Research?	56
Examples of Complex Adaptive Systems under Study	58
Opportunities Afforded by Complexity Science for Mixed Methods Researchers	60
<i>Small Inputs Can Lead to Dramatically Large Consequences</i>	63
<i>Global Properties Flow from the Aggregate Behaviour of Individuals</i>	63
<i>Slight Differences in Initial Conditions Can Produce Very Different Outcomes</i>	64
<i>Complex Adaptive Systems Assimilate to their Environmental Interactions</i>	65
Indicators of Integrative Thinking with Complexity in Mixed Methods Research	65
<i>Need for Approach</i>	66
<i>Intention for Innovation</i>	67
<i>Interrelatedness of Contexts</i>	68
<i>Conditions for Emergence</i>	68
<i>Congruence of Design</i>	69
<i>Evidence of Integration</i>	69
Indicators of the Six Featured Mixed Methods Studies	72
Guiding Practices for Integrative Thinking with Complexity in Mixed Methods Research	74
Chapter Check-In	75
Key Chapter Concepts	76
Further Readings	76

Part II: Realizing Innovation in Guiding Practices	78
4 Diagnosing Complexity of Mixed Methods Research Conditions	80
Key Chapter Questions	82
New Chapter Terms	82
Why Diagnose Complexity of Mixed Methods Research Conditions?	83
Diagnosing Opportunities and Hazards for Mixed Methods Researchers	86
<i>Identifying Dimensions for Complexity Opportunities</i>	86
<i>Complexity-Effect Diagnosing Hazards</i>	90
Guiding Procedures for Diagnosing Five Complexity Dimensions of Research Conditions	91
<i>Intentions of Mixed Methods Research Problems</i>	92
<i>Systems of Mixed Methods Research Contexts</i>	94
<i>Designs of Mixed Methods Research Integrations</i>	95
<i>Capacities of Mixed Methods Research Interactions</i>	96
<i>Evidence of Mixed Methods Research Outcomes</i>	97
Features that Engage Readers with Research Conditions	97
Innovations in Diagnosing Complexity of Mixed Methods Research Conditions	98
<i>Complexity Study Profiles Representing Research Conditions</i>	102
<i>Analysis Ideas for Diagnosing Influences on Research Conditions</i>	102
Chapter Check-In	111
Key Chapter Concepts	112
Further Readings	112
5 Framing Intentions of Complex Mixed Methods Research Problems	114
Key Chapter Questions	116
New Chapter Terms	116
Why Frame Intentions of Complex Mixed Methods Research Problems?	117
Framing Opportunities and Hazards for Mixed Methods Researchers	119
<i>Innovation-Focused Intention Opportunities</i>	119
<i>Literature-Based Framing Hazards</i>	120
An Iterative Process for Framing Complex Mixed Methods Research Problems	122
<i>Engage Others in Framing Processes</i>	124
<i>Sketch Presumptions of Background Influences</i>	124
<i>Determine Fitness of a Complexity-Sensitive Approach</i>	125
<i>Develop Parameters for Literature Search</i>	126
<i>Monitor Emergence of Background Influences</i>	127
<i>Assimilate Understandings of Problem Significance</i>	129
Features that Engage Readers with Complex Research Problems	130
Innovations in Framing Complex Mixed Methods Research Problems	131
<i>Diagrams Representing Understandings of Study Intentions</i>	132
<i>Writing Ideas for Framing Research Problems</i>	133
Chapter Check-In	137
Key Chapter Concepts	138
Further Readings	138

6	Defining Systems of Complex Mixed Methods Research Contexts	140
	Key Chapter Questions	142
	New Chapter Terms	142
	Why Define Systems of Complex Mixed Methods Research Contexts?	144
	<i>Social Contexts</i>	145
	<i>Interpersonal Contexts</i>	146
	<i>Personal Contexts</i>	146
	Defining Opportunities and Hazards for Mixed Methods Researchers	148
	<i>Interrelated Systems Approach Opportunities</i>	148
	<i>Proximity Focus Defining Hazards</i>	149
	Relational Systems Approach to Defining Complex Mixed Methods Research Contexts	151
	<i>Relationships Among Social and Interpersonal Systems</i>	152
	<i>Relationships Among Social and Personal Systems</i>	153
	<i>Relationships Among Interpersonal and Personal Systems</i>	155
	<i>Relationships Among Social, Interpersonal, and Personal Systems</i>	156
	Features that Engage Readers with Complex Research Contexts	159
	Innovations in Defining Complex Mixed Methods Research Contexts	159
	<i>Diagrams Representing Understandings of Interrelated Research Systems</i>	160
	<i>Writing Ideas for Defining Research Contexts</i>	160
	Chapter Check-In	165
	Key Chapter Concepts	166
	Further Readings	167
7	Describing Designs of Complex Mixed Methods Research Integrations	170
	Key Chapter Questions	172
	New Chapter Terms	172
	Why Describe Designs of Complex Mixed Methods Research Integrations?	174
	Describing Opportunities and Hazards for Mixed Methods Researchers	177
	<i>Descriptive Design Approach Opportunities</i>	177
	<i>Design Orientation Hazards</i>	181
	A Descriptive Design Approach for Complex Mixed Methods Research Integrations	183
	<i>Articulate Framing Sensitivities Guiding Study Foundations</i>	184
	<i>Examine Logic Features Guiding Data Integrations</i>	184
	<i>Attend to Ethical Concerns Guiding Research Procedures</i>	188
	<i>Assimilate Procedural Adaptations Guiding Researcher Responses</i>	191
	Features that Engage Readers with Complex Mixed Methods Research Integrations	193
	Innovations in Describing Complex Mixed Methods Research Integrations	194
	<i>Diagrams Representing Understandings of Study Designs</i>	194
	<i>Writing Ideas for Describing Research Integrations</i>	196
	Chapter Check-In	200
	Key Chapter Concepts	201
	Further Readings	202

8	Developing Capacity of Complex Mixed Methods Research Interactions	204
	Key Chapter Questions	206
	New Chapter Terms	206
	Why Develop Capacity in Complex Mixed Methods Research Interactions?	208
	Developing Opportunities and Hazards for Mixed Methods Researchers	211
	<i>Promoting Conditions for Emergence Opportunities</i>	211
	<i>Leader-Centric Hazards for Capacity Development</i>	214
	A Strategy for Developing Complex Mixed Methods Research Interactions	216
	<i>Forming for Diversity of Expertise</i>	217
	<i>Capitalizing on Differences in Perspectives</i>	219
	<i>Norming of Relations among Researchers</i>	222
	<i>Performing as a Team with Capacity</i>	223
	Features that Engage Readers with Integrative Mixed Methods Research Interactions	226
	Innovations in Developing Integrative Mixed Methods Research Interactions	227
	<i>Diagrams Illuminating Understandings of Researcher Capacities</i>	228
	<i>Writing Ideas for Developing Research Interactions</i>	229
	Chapter Check-In	233
	Key Chapter Concepts	234
	Further Readings	234
9	Generating Evidence of Complex Mixed Methods Research Outcomes	236
	Key Chapter Questions	238
	New Chapter Terms	238
	Why Generate Evidence of Complex Mixed Methods Research Outcomes?	240
	Generating Opportunities and Hazards for Mixed Methods Researchers	242
	<i>Generative Evidence Approach Opportunities</i>	242
	<i>'Black Box' Interpretation Hazards</i>	245
	A Generative Evidence Approach for Complex Mixed Methods Research Outcomes	246
	<i>Accounts of Participant Samples</i>	247
	<i>Procedures for Data Collections</i>	250
	<i>Strategies Guiding Data Analyses</i>	253
	<i>Displays of Findings Representations</i>	254
	<i>Conveying Interpretation Approaches</i>	257
	<i>Relating Insight Discussions</i>	258
	Features that Engage Readers with Complex Mixed Methods Research Outcomes	261
	Innovations in Generating Evidence of Complex Mixed Methods Research Outcomes	262
	<i>Diagrams Representing Evidence of Research Integrations</i>	263
	<i>Writing Ideas for Conveying Evidence of Research Outcomes</i>	266
	Chapter Check-In	280
	Key Chapter Concepts	281
	Further Readings	281

Part III: Onward Considerations for Adaptive Practices	284
10 Realizing Complexity-Sensitive Mixed Methods Research	286
Key Chapter Questions	288
The Case for Complexity-Sensitive Mixed Methods Research	288
<i>Need for Adaptive Responses</i>	289
<i>Benefits of Integrative Thinking</i>	290
<i>Demand for Creative Designs</i>	291
<i>Aspirations for Authentic Reporting</i>	291
Potential Challenges for Complexity-Sensitive Mixed Methods Researchers	292
<i>Development of Situational Training</i>	292
<i>Advocacy of Complexity-Sensitive Mindsets</i>	293
<i>Feasibility of Predetermining Resources</i>	295
Some Final Guiding Words	295
<i>Be the Future You Seek in the Field of Mixed Methods Research</i>	296
<i>Contribute to the Mixed Methods Research Literature and Practices</i>	297
<i>Find Your Mixed Methods Research Community and Get Involved!</i>	297
Chapter Check-In	298
Key Chapter Concepts	299
Further Readings	299
Appendix A: An Annotated Glossary of Terms	302
Appendix B: Templates for Research Practice Innovations	310
Appendix C: Biographies of Researcher Spotlight Contributors	320
References	328
Index	337

LIST OF TABLES

1.1	Indicators for continuum of complexity conditions for six mixed methods research practices	14
1.2	Summary of overall details for the six featured mixed methods studies	20
2.1	Distinctive characteristics of mixed methods research according to five leading schools of thought	37
2.2	Summary of mixed methods research practices, key researcher tasks, and desirable outcomes	44
2.3	Summary of research questions, designs, and members for the six featured mixed methods studies	49
3.1	Summary of descriptions of complexity-sensitive mixed methods research indicators, tasks, evidence, and study locations	70
3.2	Appraisal of indicators for integrative thinking with complexity across the six featured mixed methods studies	72
3.3	Six adaptive practices for guiding complexity-sensitive mixed methods research	75
4.1	Key challenges and opportunities related to five dimensions for diagnosing conditions of research complexity	89
4.2	Relationships among the guiding questions for researchers for each of the dimensions, the indicators of complexity, and the interpretation rationale	93

4.3	Guide to diagnosing levels of complexity across five dimensions of mixed methods research conditions	99
4.4	Diagnosis of conditions of complexity across the six featured studies	100
4.5	Complexity study profile for housing project under formulation	103
4.6	Complexity study profile for the featured study on law clients	104
4.7	Complexity study profile for the featured study on postconflict risk	105
4.8	Complexity study profile for the featured study on heart care	106
4.9	Complexity study profile for the featured study on safe places	107
4.10	Complexity study profile for the featured study on leadership competencies	108
4.11	Complexity study profile for the featured study on vaping culture	109
5.1	Distinguishing among four mixing purposes focused on innovation	120
6.1	Situating the social contexts of the featured studies through global-level research details	145
6.2	Situating the interpersonal contexts of the featured studies through relational-level research details	147
6.3	Situating the personal contexts of the featured studies through individual-level research details	148
6.4	Key considerations, desirable outcomes, and potential threats across the four system relationships	157
7.1	Summary of framing sensitivities of the six featured mixed methods designs	185
7.2	Summary of logic features of the six featured mixed methods studies	187
7.3	Summary of ethics concerns of the six featured mixed methods studies	189
7.4	Summary of procedural adaptations of the six featured mixed methods studies	192
8.1	Contrasts between traditional and complexity-sensitive practices for mixed methods research members	210
8.2	Four interrelated elements for developing integrative mixed methods research teams	218
9.1	Summary of desirable evidence for methodological rigour of qualitative, quantitative and mixed methods research	248
9.2	Summary of evidence generated by the accounts of participant samples in the featured studies	251
9.3	Summary of evidence generated by the descriptions of data collection procedures in the featured studies	252
9.4	Summary of evidence generated by the descriptions of data analysis strategies in the featured studies	255
9.5	Summary of evidence generated by the displays of findings representations in the featured studies	256

9.6	Summary of evidence generated by descriptions of interpretation approaches in the featured studies	258
9.7	Summary of evidence generated by descriptions of insight discussions in the featured studies	260
9.8	Summary table example of data strands, participants, and research questions (partially represented here) for the featured study on leadership competencies	264
9.9	Summary table example of cross-case comparison using three participants and quantitative scores and qualitative assessments (partially represented here) for the featured study on heart care	265
9.10	Summary table example of data instruments and collection and interpretation procedures (partially represented here) for the featured study on heart care	266
9.11	Summary table example of study insights and implications discussion (partially represented here) for the featured study on leadership competencies	268
B.1	Template for creating mixed methods study complexity profile	312
B.2	Template for conveying initial understandings for guiding descriptive design approach	316
B.3	Template for conveying desirable evidence for methodological rigour of qualitative, quantitative and mixed methods research	318

LIST OF FIGURES

2.1	Problems for which mixed methods research is suitable	38
2.2	Six practices involved in an organic mixed methods research process	41
2.3	Visual representation of the mixed methods researcher roles for realizing the six practices involved in an organic research process	45
3.1	Opportunities for mixed methods research afforded by the theoretical underpinnings of complexity science	62
3.2	Indicators of integrative thinking with complexity in mixed methods research	66
4.1	Five dimensions of complexity for diagnosing research conditions	86
4.2	Analysing ideas for diagnosing influences on complex mixed methods research conditions	110
5.1	Interrelating study research topics, problems, purposes, and questions	118
5.2	An iterative process for framing complex mixed methods research problems	123
5.3	Diagram example conveying societal, study, personal and literature connections framing the complex mixed methods research problems	133
6.1	Interrelated social, interpersonal, and personal contexts involved in mixed methods research	144
6.2	Four relationships among interrelated systems for defining complex mixed methods research contexts	151

6.3	Diagram example conveying interrelated societal, interpersonal, and personal systems defining the complex mixed methods research contexts	161
7.1	Interconnecting considerations across design orientations for complex mixed methods research integrations	176
7.2	Example of a complex mixed methods research design in need of a descriptive approach	178
7.3	Tasks involved in a descriptive design approach for complex mixed methods research integrations	183
7.4	Sample diagram conveying framing, logic, ethical, and procedural considerations of complex mixed methods research integrations	196
8.1	Conditions promoting emergence of integrative mixed methods research teams	213
8.2	A developmental strategy for integrative mixed methods research interactions	216
8.3	Diagram example conveying backgrounds and some methodological expertise	229
9.1	Sources of evidence of methodological rigour in mixed methods research	242
9.2	A generative evidence approach for complex mixed methods research outcomes	247
9.3	Diagram example conveying mixed analysis processes and interpretation products for a study that generated four mixed insights	267
10.1	Four key characteristics of complexity-sensitive mixed methods research	289
B.1	Template for visual mapping informing framing a complex mixed methods research problem	313
B.2	Template for flow diagram for documenting literature search for a complex mixed methods research problem	314
B.3	Template for conveying interrelated societal, interpersonal, and personal systems defining the complex mixed methods research contexts	315
B.4	Template for conveying unique and common backgrounds and expertise of research members	317



LIST OF RESEARCHER SPOTLIGHTS

1.1	Donna Mertens (USA)	7
1.2	Amrit Dencer-Brown (UK/New Zealand)	16
2.1	Mandy Archibald (Canada/Australia)	32
2.2	Elaine Van Melle (Canada)	33
2.3	Kathleen Collins (USA)	40
3.1	Amrit Dencer-Brown (UK/New Zealand)	60
3.2	Christo Ackermann (South Africa)	73
4.1	Jessica DeCuir-Gunby (USA)	84
5.1	Christo Ackermann (South Africa)	119
5.2	Elizabeth Creamer (USA)	128
5.3	Norma Romm (South Africa)	131
6.1	Elaine Van Melle (Canada)	149
6.2	Norma Romm (South Africa)	153
6.3	Donna Mertens (USA)	154
7.1	Jessica DeCuir-Gunby (USA)	176
7.2	Elizabeth Creamer (USA)	179

7.3	Emma Uprichard (UK)	180
7.4	Kathleen Collins (USA)	187
7.5	Pat Bazeley (Australia)	190
7.6	Tim Guetterman (USA)	192
8.1	Alicia O’Cathain (UK)	209
8.2	Alicia O’Cathain (UK)	220
8.3	Tim Guetterman (USA)	221
8.4	Mandy Archibald (Canada/Australia)	225
9.1	Pat Bazeley (Australia)	243
9.2	Emma Uprichard (UK)	246
9.3	Dawn Freshwater (Australia/UK)	259
9.4	Hisako Kakai (Japan)	261
10.1	Judith Schoonenboom (Austria)	294
10.2	Dawn Freshwater (Australia/UK)	296



LIST OF PRACTICE ALERTS

1.1	How can reflection on past experiences and readings of literature inform future mixed methods research practices?	5
1.2	What influences your interactions as a mixed methods researcher?	12
2.1	What learning and mentoring opportunities can communities of mixed methods researchers offer?	30
2.2	Why distinguish a mixed methods research approach in proposals and reports?	35
2.3	To what extent do you provide authentic research accounts?	43
3.1	How do you incorporate complexity-sensitive quality criteria in a mixed methods study proposal?	71
4.1	What might be indicators of the need for a complexity-sensitive approach?	91
5.1	What influences your framing perspectives as a mixed methods researcher?	122
6.1	What might you bring to bear on integrative thinking with complexity about the relationships and influences among systems in mixed methods research contexts?	158
7.1	What influences your design decisions underpinning a complex mixed methods research design?	182

- | | | |
|------------|---|-----|
| 8.1 | What assumptions and influences might your leadership style preferences bring to mixed methods research interactions? | 215 |
| 8.2 | What might my reflections upon past experiences illuminate about potential interactions as a mixed methods research team member? | 226 |
| 9.1 | What might my previous research experiences contribute to my capacity for generating evidence of mixed methods research outcomes? | 244 |



LIST OF GUIDING TIPS

1.1	Tim Guetterman advising how to navigate the complexity of mixed methods research	10
1.2	Dawn Freshwater advising openness to discovering new approaches to mixed methods research	13
2.1	Bephyer Parey advising a workshop from a mixed methods expert	31
2.2	Pat Bazeley advising new ways of thinking about qualitative and quantitative data	34
2.3	Alicia O’Cathain advising keeping the research question as the focal point	42
2.4	Hisako Kakai advising how to navigate the waters of mixed methods research	46
3.1	Christo Ackermann advising how to navigate the complexity of mixed methods research	61
4.1	Judith Schoonenboom advising how to deal with complexity in mixed methods research	85
5.1	Amrit Dencer-Brown advising how to navigate the framing of complex mixed methods research problems	123
6.1	Donna Mertens advising how to navigate the complexity of mixed methods research	156
7.1	Norma Romm advising new ways of thinking about mixed methods research designs	193

8.1	Mandy Archibald advising engaging in deep learning from others to navigate the complexity of mixed methods research	211
9.1	Hisako Kakai advising how to navigate the evaluative criteria specific to mixed methods research	242
9.2	Kathleen Collins advising keeping pace with emerging mixed methods research literature guiding data analysis	262
10.1	Elaine Van Melle advising how to navigate mixed methods research	290
10.2	Tim Guetterman advising the need for publishing and sharing ideas	297
10.3	Jessica DeCuir-Gunby advising those new to learning about mixed methods research	298

PEDAGOGICAL GUIDE

The learning features included in this book are intended to describe a complexity-sensitive approach that is relevant, accessible, and practical. Embedded throughout the book you will find:

Key questions that help orient you to the topics within each chapter. With a practical focus, the questions ensure you capture the skills you need and the knowledge necessary for executing those skills in a quick and accessible way.

New chapter terms that allow you a quick introduction; and definitions are provided in the Glossary (Appendix A).

Check-ins that make you pause for a moment at the end of each chapter. Taking time to assess the extent to which you have developed the intended knowledge and skills allows you to build confidence in your emerging mixed methods research capacity.



Practice alerts that extend your learning by applying new understandings of material covered in the book so that you can use it directly in your own mixed methods research studies. These are based on real-world key learnings from my own perspective.



Researcher spotlights that allow you to access the experiences and viewpoints of several prominent and emerging mixed methods researchers on key pressing and future challenges and possible ways we can better prepare mixed methods researchers for working under conditions of complexity. See also Appendix C for biographies of the researcher spotlight contributors from around the globe.



Guiding tips that offer you succinct advice from a variety of perspectives of mixed methods researchers from around the globe for navigating the complexity of mixed methods research.

Featured studies that are purposefully selected to represent a range of mixed methods article examples under conditions of complexity are introduced in Chapter 1 and revisited

throughout the book as a means of bridging theory with real research projects. The articles are available on the companion website for the book.

Key chapter concepts that are concise summaries to guide your reflection on the content for each chapter. Recapped information about topics covered in the chapter ensures you capture the important points.

Further readings that allow you to go and explore further beyond the chapters. With up-to-date references and summarized information, they can begin to extend your understanding of the field of mixed methods research. The readings denoted with an asterisk are available on the companion website for this book.

Visual organizers that are used throughout the book for two purposes: to provide a ‘road-map’ in advance of a written description, and to summarize text in a quick and accessible way. Templates are available for the practice innovations in Appendix B as well as editable versions on the companion website.

Instructor resources for supporting the use of this book are available on the companion website.

Online Resources



Innovation in Mixed Methods Research: A Practical Guide to Integrative Thinking with Complexity is supported by a wealth of online resources for both students and lecturers to aid studying and support teaching, which are available at <https://study.sagepub.com/poth>.

For students

Videos from author Cheryl N. Poth

Links to curated **further reading articles** on the **SAGE Journals** platform offer you the chance to broaden your understanding of mixed methods research.

Chapter-by-chapter **activities** enable you to review your knowledge of key terms, connect up the theory you’ve learnt with your own research practice and gain insight from experts in the field.

Downloadable templates empower you to implement research innovations in your own practice.

For lecturers

PowerPoint slides with key topics, tables and figures from the book can be downloaded and customised for use in your own teaching.

PREFACE

Along with increased recognition of varying conditions of complexity in our mixed methods research come demands for guiding practices for integrative thinking with complexity. This is because while our traditional (i.e., established) practices work well under some conditions, others require some rethinking when faced with greater complexity. Through adopting a complexity lens, I formed new connections with my understandings of complexity science, my practices as a developmental evaluator, and my experiences as a mixed methods researcher from learning about the dilemmas my colleagues, students, and I were encountering in mixed methods research. Using these new connections as a catalyst, I imagined how mixed methods researchers might mitigate some of the perceived limitations with traditional practice tendencies under some conditions of complexity. By recognizing the sources of complexity in mixed methods research, I began to see new possibilities for guiding adaptive practices where researchers become more responsive to the varying conditions of complexity.

In this book, I advance six adaptive practices that comprise a more complexity-sensitive approach to mixed methods research. These adaptive practices should be considered as evolving and as providing an essential starting point for further discussions and applications. Other resources focus on introducing the foundations of mixed methods research – designs and integration – and it is assumed that readers have some familiarity with these on which to build new understandings of research under complex conditions. All research takes place under conditions of complexity – regardless of whether we, as mixed methods researchers, recognize the dimensions of this complexity – and our responses to dynamic influences pose dilemmas and offer opportunities. All too often, our responses involve attempts to reduce, control, or simply ignore the effects of complexity, and these responses have become the basis for our traditional research practice tendencies over time. The need for this book reflects

trends I have observed and adopted in my own mixed methods research teaching and advising. I advocate for researchers to assume responsibility for recognizing and making mindful decisions about how to deal with the varying conditions of complexity surrounding their research.

The text is set out in three parts:

- Part I provides essential foundations for getting started with mixed methods research under conditions of complexity.
- Part II describes six adaptive practices involved in conducting mixed methods research. The rationale for each practice is described along with opportunities and hazards, and procedures are illustrated with specific examples.
- Part III offers suggestions for how to realize a more complexity-sensitive approach to mixed methods research through adopting the six guiding practices.

This book is written for those with various roles and expertise in mixed methods research. The common element is an interest in adapting practices for mixed methods research under conditions of complexity. These include (but are not limited to) graduate students, instructors of mixed methods research courses or workshops, individual researchers or members of a mixed methods research team, research associations and communities, research managers, and reviewers of mixed methods research. Enjoy the journey!

ABOUT THE AUTHOR



Cheryl N. Poth, PhD, is an award-winning instructor and textbook author. She joined the University of Alberta in 2008 as a faculty member of the Centre for Research in Applied Measurement and Evaluation within the Department of Educational Psychology in the Faculty of Education. In this role, she has developed and taught graduate-level research methods and programme evaluation courses in addition to supervising and mentoring students, faculty, and community members in qualitative, quantitative, and mixed methods research. Dr. Poth has an adjunct appointment in the Faculty of Medicine and Dentistry and serves as the methodologist on several cross-disciplinary research teams. She

has been principal investigator for projects and grants funded federally (e.g., Social Sciences and Humanities Research Council and Physiotherapy Foundation of Canada), provincially (e.g., Alberta Education, Policywise and Alberta Advisory Committee for Educational Studies), and locally (e.g., University of Alberta and school boards). In 2016, she was elected as the fourth president of the Mixed Methods International Research Association (MMIRA) and is active in the mixed methods groups within her other professional associations (e.g., the American Educational Research Association and American Evaluation Association) and an advisory board member of the International Institute of Qualitative Methods. She recently co-authored the fourth edition of *Qualitative Inquiry and Research Design* with John Creswell and was conferred the Sage Author Cornerstone Award and 2018 McGuffey Longevity Award from the Textbook & Academic Authors Association. In addition, she has authored over 30 peer-reviewed journal articles and served as guest co-editor of two special issues focused on

mixed methods research in the *International Journal of Qualitative Methods*. She is currently an associate editor for the *Journal of Mixed Methods Research* and editorial board member of the *International Journal of Qualitative Methods* and *Canadian Journal of Program Evaluation*. She strives to model lifelong learning and enjoys creating situations in which learning occurs about mixed methods research. She is a contributor to the massive open online course launched by the Mixed Methods International Research Association (see mmira.org). In 2013, she was recognized with the University of Alberta's Provost's Award for Early Achievement of Excellence in teaching.

ACKNOWLEDGEMENTS

I am grateful to the students in my mixed methods classes at the University of Alberta and colleagues from around the globe who have influenced my thinking for this book. These students and colleagues, as well as members of the Department of Educational Psychology Mixed Methods Reading Group, and many workshop participants, have offered suggestions for book content and provided inspiration to keep me going.

I would like to acknowledge the influence of scholarly mentors I have had the good fortune to encounter – key among the global mixed methods research community are Drs. John Creswell, Burke Johnson, Tony Onwuegbuzie, Vicki Plano Clark, Sharlene Hesse-Biber, Pat Bazeley, Leslie Curry, Donna Mertens, Elizabeth Creamer, Nataliya Ivankova. Reading their work and collaborating with them has enriched my thinking and subsequent work in immeasurable ways.

Locally, I especially single out Drs. Jacqueline Pei and Lia Daniels and members of the Centre for Research in Applied Measurement and Evaluation as important influencers and supporters. Also, I am appreciative of my Department of Educational Psychology, Faculty of Education, and community at the University of Alberta. I am grateful to Adrienne Montgomery's close eye on all things related to conveying my ideas coherently and to Alexandra Aquilina for her contributions during the final stages of the book.

I am particularly indebted to the scholars who favourably reviewed the proposal for this book and then those who served as external reviewers for SAGE throughout the writing of this book. Thank you for your meticulous attention to the details of this book – I hope you will see the influence of your suggestions for content and references. I am thankful to Katie Metzler as my initial acquisition editor for her persistent pursuit of this book proposal as well as providing the opportunity to later work with the equally capable Mila Steele, Jai Seaman

and finally Alysha Owen as editor during the writing and production processes. Key among the many others have contributed to bringing this manuscript to life include Ian Antcliff (Production editor), Richard Leigh (copyeditor), and Susheel Gokarakonda (marketing manager), and Charlotte Bush (Assistant editor).

To my many friends, locally and around the world, and family – Joyce, Brian, Andrea, Lisa, Dennis, Anna, Thomas, Madison and Jacob – thank you for your encouragement to pursue my dreams. To my dad, Richard, who left this world during the writing of this book and whose influences can be seen in the way I live my life and who is lovingly remembered every day.

Finally, to members of my Edmonton-based family – Damian, Avery and Jasper – thank you for providing me the time and space to create this book.

Thank you all.

PART I

Welcome to the field of mixed methods research, and I now invite you to join me on a learning journey. In the first three chapters I describe the essential foundations for the adaptive mixed methods research practices described in Part II of this book. When I first began describing these practices I realized the need to first familiarize readers with what I meant by complexity and mixed methods research under conditions of varying complexity, why innovations were necessary in mixed methods research, and what opportunities were afforded by integrative thinking with complexity for mixed methods researchers. In so doing, I provide access to a complexity-sensitive approach to readers with a wide range of familiarity with mixed methods research. Revisiting the essential foundations of mixed methods research will allow us all to begin on common ground.

Mixed methods research is well established in the literature yet there exists much diversity across many areas. Researchers trained in some research approaches and disciplines often express surprise (and even dismay) at what appears to be a lack of consensus within the field of mixed methods research. I come at this diversity with a sense of wonder. This is because the field of mixed methods research and understandings about how to conceptualize, design, and conduct mixed methods research continue to develop across many disciplines and are influenced by countless perspectives. I place a great deal of value on this diversity because I believe it helps advance mixed methods research practice. To that end, I welcome diverse disciplines, orientations, and perspectives because I believe they produce a more interesting and rich mixed methods research community! That said, I would be doing a disservice to the reader if I did not acknowledge that diversity can also be confounding – especially to those new to mixed methods research and those beginning to consider the varying conditions of research complexity. Hence the importance of the initial three chapters in this book.

Mixed methods research continues to experience unprecedented interest and demand as a mechanism for mitigating the inherent limitations with either qualitative or quantitative data alone. More recently, mixed methods research has been highlighted as useful in generating innovations for solving societal problems. For the most part, this is welcome news as researchers recognize the potential of mixed methods research to address societal problems where the solutions are not apparent and remain inaccessible by either qualitative and quantitative data alone. If the mixed methods research community is to position itself for effectively addressing societal problems, then we must shift the way we intellectually and methodologically respond under conditions of varying complexity. Essentially, harnessing the potential of mixed methods research means creating mixed methods research practices that are more complexity-sensitive – the theoretical underpinnings of such transformations informed by the principles of complexity science. Prior to delving into the thinking and actions behind the adaptive practices reflective of a more complexity-sensitive mixed methods research approach described in Part II of this book, it is important to introduce the essentials of mixed methods research.

GETTING STARTED WITH ESSENTIAL FOUNDATIONS

The three chapters in Part I are as follows:

.....	Chapter 1:	Embracing Complexity in Mixed Methods Research	2
.....	Chapter 2:	Positioning Demand for Innovation in Complex Mixed Methods Research	24
.....	Chapter 3:	Advancing Integrative Thinking with Complexity in Mixed Methods Research	54

1

EMBRACING COMPLEXITY IN MIXED METHODS RESEARCH

KEY CHAPTER QUESTIONS

By the end of this chapter, you will be able to answer the following questions:

- Why focus on complexity within mixed methods research?
- What experiences does the author draw upon?
- What is meant by complexity and innovation in mixed methods research?
- Who are the audiences for this book?
- How is this book organized for the reader?
- What are the six mixed methods research studies featured in this book?

NEW CHAPTER TERMS

By the end of this chapter, you will be familiar with the following terms:

- High complexity
- Complexity
- Innovation
- Complexity lens
- Integrative thinking
- Complexity science
- Low complexity
- Complexity-sensitive mixed methods research approach
- Mixed methods research
- Complex mixed methods research problems
- Moderate complexity
- Conditions of complexity
- Traditional mixed methods research practices

This chapter provides an introduction to this book. It speaks to the question: *Why focus on complexity and how can understandings about varying conditions of complexity inform my approach to mixed methods research?* The book was born out of necessity, and I am forever grateful to the students (as well as colleagues, editors, and others) who encouraged me to write it! A conversation about five years ago with a small group of graduate students seeking advice related to their individual mixed methods studies gave rise to the idea for the book. Common to these studies and at the heart of my own **mixed methods research** definition was the design of research to generate previously inaccessible insights from the integration of qualitative and quantitative data (see Chapter 2 for further discussion). What had led to this group conversation was being approached individually by four students, within the same month, with questions about the dilemmas they were facing in their mixed methods studies. Although the students were working independently, I realized that they could each benefit from having access to the discussions about one another's experiences. The students quickly agreed to my suggestion of meeting several times as a group. I confess that my primary motivation for the group approach was efficiency – I did not anticipate the emergence of new understandings from the group interactions that would not have been possible with those involved individually.

Through embracing a new way of **integrative thinking** – and questioning the utility of some **traditional mixed methods research practice** tendencies under certain research conditions – I began to conceptualize the need for more adaptive approaches to mixed methods research. To that end, this book advances a **complexity-sensitive mixed methods research approach** incorporating six adaptive practices to enhance researchers' capacity to respond to the unique and unfolding conditions under which mixed methods research studies are undertaken

(see Chapter 3, Table 3.3). Through adopting a **complexity lens**, I formed new connections with my understandings of **complexity science**, my practices as a developmental evaluator, and my experiences as a mixed methods researcher from learning about the dilemmas these students were encountering in their mixed methods research. Using these new connections as a catalyst, I imagined how mixed methods researchers might mitigate some of the perceived limitations with traditional practice tendencies under some **conditions of complexity** (see Chapter 2 for full discussion of traditional mixed methods research practice tendencies). By recognizing the sources of **complexity** in mixed methods research, I began to see new possibilities for guiding adaptive practices where researchers become more responsive to the varying conditions of complexity. But first, let me define what I mean by complexity – there is little consensus, and many definitions refer to complexity as a state or quality of being complex, which of course is not very helpful! Later in the chapter I distinguish complex from complicated and simple, but, for now, I see complexity as characterizing the behaviour of a research system whereby its components (such as research participants, researchers, their environments) interact in multiple, nonlinear ways without direction. The outcomes of these interactions are impossible to predict with any accuracy, yet patterns of behaviour from the system can be documented retrospectively.

This work, related to varying conditions of research complexity, was both challenging and rewarding because it required me to think creatively about mixed methods research practices. In so doing, I embody the words of the American psychiatrist and best-selling author M. Scott Peck who wrote in the introduction to his book, *Further along the Road Less Traveled*: ‘abandon the urge to simplify everything, to look for formulas and easy answers, and begin to think multidimensionally, to glory in the mystery and paradoxes of life, not to be dismayed by the multitude of causes and consequences that are inherent in each experience – to appreciate the fact that life is complex’ (1998, p. 14). To that end, in advancing six adaptive practices, I see these as a starting point and that our understandings of complexity-sensitive approaches to mixed methods research will naturally evolve over time (see Table 3.3). In Practice Alert 1.1, I consider the usefulness of integrative thinking as guiding my approach to mixed methods research under conditions of complexity and I invite you to begin doing the same. In so doing, I provide a framework for acknowledging the usefulness of many traditional mixed methods research practices but also opening the possibilities for practices that have yet to be developed for conditions of complexity that have yet to be encountered.



Practice Alert 1.1

How can reflection on past experiences and readings of literature inform future mixed methods research practices?

My practices as a mixed methods researcher were initially guided by what I had read in the literature. As I began to read more about complexity science and learn about the dilemmas researchers were facing in their mixed methods research, I began to think about the need for more adaptive practices. My current thinking about adaptive mixed methods research

(Continued)

(Continued)

practice tendencies reflects bringing a complexity lens to bear on what works in traditional mixed methods research practice tendencies under varying conditions of complexity. In this way, my practices not only respond to varying conditions of complexity but also make the adaptations explicit so that researchers can begin to learn from the experiences of others.

Try this now – sketch your ideas about what have been the key practices in your approach as a mixed methods researcher and consider what practice tendencies have been easy to apply. What dilemmas have you experienced? How might you approach mixed methods research practices differently in the future?

As I shared my emerging thinking about how mixed methods research practices might be made more complexity-sensitive with students and colleagues, I engaged in discussions concerning how these practices might be applied, and imagined their effects under varying conditions of complexity. In some cases, I found literature confirming that others had already advanced ideas for mitigating some limitations that I had considered in these traditional practice tendencies (further discussed in Chapter 2); for example, Guest (2013) proposed a mixed methods research design approach based on succinct descriptions of the points of data interface, and Creswell and Plano Clark (2018) advanced complex mixed methods designs. However, what I did not find in the literature was a comprehensive approach for attending and then responding with adaptive practices to the dynamic influences within the varying conditions under which mixed methods research occurred. The lack of such an approach was at the heart of many of the dilemmas I had documented, and so I began to sketch the adaptive practices involved in a complexity-sensitive approach to mixed methods research. Around the same time a body of work began emerging to confirm my inklings that **complex mixed methods research problems** and dynamic conditions required new thinking. Particularly noteworthy for my own thinking was reading about the potential role for mixed methods in addressing wicked problems described by Donna Mertens in an editorial for the *Journal of Mixed Methods Research*. In this work, Mertens (2015, p. 3) referenced Rittel and Webber's (1973) definition of wicked problems as those that 'involve multiple interacting systems, are replete with social and institutional uncertainties, and for which only imperfect knowledge about their nature and solutions exist'. The differentiation of wicked problems was a critical event for me because it provided an adjective to distinguish some problems I had been grappling with in my research and evaluation projects such as service delivery for children affected with fetal alcohol spectrum disorder and enhancing teaching and learning experiences in large-sized class environments. For each of those problems there were multiple interacting systems involving individuals, groups, and society influenced by many, many changeable aspects.

I began to realize that there was a reason why working on wicked problems was hard! There was no recipe – conceptually, theoretically, or methodologically – for addressing them. I had felt like I was on a new path, and now I *knew* I was breaking new ground! I began by examining the conditions surrounding these problems in a way that intended to capture the interacting systems but did not try to reduce or simplify them. Little did I know that I would begin to see many more problems as wicked than I had originally intended! I also

came to see that the term ‘wicked’ had negative associations for some, so I decided simply to call them complex mixed methods research problems. I began making connections between my experiences as an evaluator and researcher with complex problems. Examine Researcher Spotlight 1.1, featuring the challenges wicked mixed methods research problems present and the need to prepare future mixed methods researchers for the pressing issues they will tackle, from the perspective of a pre-eminent mixed methods researcher and professor emeritus from Gallaudet University in Washington, DC.



Researcher Spotlight 1.1

Donna Mertens on preparing for the challenges of tackling complex mixed methods research problems

Mixed methods researchers are faced with challenges that emanate from advances in technology, accessibility to big data, and the need to be responsive to wicked problems such as economic inequality, climate change, violence, and conflict. Responsiveness to these challenges necessitates an understanding of complexity, politics, and ethics. The ubiquity of mobile phones and the collection of big data through other types of technological capture raises issues of privacy and use of data collected for purposes other than those of the researcher. The challenge of the contribution of mixed methods researchers to understanding and developing solutions to wicked problems is most salient. These problems are urgent and there is no agreement on what the appropriate solutions are. Solutions will require coordinated efforts across multiple systems. How can researchers design studies that are inclusive of the diverse stakeholders needed to make a meaningful contribution to solving these problems? How can they incorporate elements of coalition building and social activism in their designs so that there is an increased probability of action being taken that enhances social and environmental justice? What needs to change in the preparation of researchers who choose to accept the responsibility to move forward an agenda of human rights?

Over time it became apparent that others could benefit from access to many of the adaptive practices, and so the purpose of this practical book was born – to provide access to the integrative thinking and actions underpinning six adaptive practices comprising a complexity-sensitive approach to mixed methods research. These adaptive practices reflect a new way of thinking about and responding to conditions of complexity, and transform traditional mixed methods research practice tendencies. Adaptive practices drawing upon insights gleaned from a complexity lens are not something that needs to be left to a mixed methods research expert; rather, those who are just learning about mixed methods research sometimes have the advantage that they are not constrained by traditional wisdom.

Throughout the development of this book, each of the adaptive mixed methods research practices has been continually shaped by the experiences shared with me by students and colleagues, as well as by my own mixed methods research experiences. To that end, this book is a tribute to everyone who has influenced my integrative thinking and actions as a mixed methods

researcher, research team facilitator, and instructor, and to those that have taught me more than they can imagine. The writing of this book was guided by a single compelling question: *How can our responses, as mixed methods researchers, to varying conditions of complexity shape how we frame problems, define contexts, describe integrations, develop interactions, and assess outcomes of a study?*

Purpose and Need for the Book

All research takes place under conditions of complexity – regardless of whether we, as researchers, recognize the dimensions of this complexity – and our responses to dynamic influences pose dilemmas and offer opportunities. All too often, our responses involve attempts to reduce, control, or simply ignore the effects of complexity, and these responses have become the basis for our traditional research practice tendencies over time. The purpose of this book is serve as a guide for researchers to assume responsibility for recognizing and making mindful decisions about how to deal with the varying conditions of complexity surrounding their research. This is because how the researcher chooses to initially diagnose their research along a continuum of varying conditions has important implications for the possible outcomes. The need for this book reflects trends I have observed and adopted in my own mixed methods research teaching and advising and builds upon the concept of messiness of mixed methods research. According to Plano Clark and Ivankova (2016, pp. 276–277), this concept ‘recognizes the inherent complex, dynamic, and undetermined nature of mixed methods research practice’. Like others (e.g., Freshwater, 2007; Plano Clark & Ivankova, 2016; Seltzer-Kelly, Westwood, & Peña-Guzman, 2012), I consider that many sources of complexity cannot be fully anticipated or predicted yet have implications for mixed methods research practices. When asked how mixed methods researchers can optimize their societal contributions, I talk about the need for our training initiatives to move beyond seeking answers to known problems and to pursue some of the most challenging and pressing societal issues. I believe that integrative thinking and adaptive practices can boost innovation in the field of mixed methods research and its yet-to-be-realized potential. In order to move the field forward we must support a developmental perspective that positions learning as a progression towards becoming a competent mixed methods researcher and the needs of the learner as the starting point. To that end, this book is intended to set the stage for an individualized learning journey about complexity within mixed methods research because:

- The connections you make with the book content are personal to your experience.
- Your readiness to consider the ideas around complexity is individualized; no two people are the same.
- The agreement you voice about the adaptive practices I advance may be low or high; differences are to be expected and welcomed because it creates a richer learning environment.
- The consideration you give to the book content presents an opportunity for shifting the assumptions underpinning your perspective of the world; for many this is a paradigm shift and can take time to reconcile, so be patient.
- The feedback you offer is necessary to move us all forward in our thinking, so feel free to get in touch with me at cheryl@poth.ca.

Most surprising to me, and the catalyst for writing this book, is that no author has yet adopted a complexity perspective that advances guiding practices specifically for mixed methods research under conditions of complexity. A complexity perspective recognizes

that research conditions call into question six traditional mainstays of mixed methods research practice tendencies: stability of the research conditions can be assumed; mixing purposes can be identified; contextual study boundaries can be defined; expertise for necessary capacities can be predetermined; integration procedures can be fixed; and indicators of outcome legitimacy can be anticipated. Complexity-sensitive practices are well established across diverse disciplines (e.g., business, evaluation, and health) and without exception require rethinking and indeed transforming traditional practices. Among the key benefits of complexity-sensitive approaches is the capacity to respond and adapt to evolving conditions. A complexity-sensitive approach has emerged as guiding my own mixed methods research practices because it affords new opportunities for me to be creative in my work on challenging and pressing societal issues.

The need for this book specifically focused on mixed methods research is based on my experiences as a mixed methods instructor, graduate supervisor, researcher, and research team member and the need to address the demand for guidance that is currently lacking. In particular, the six adaptive practices aim to mitigate dilemmas experienced under mixed methods research conditions that are typically considered to have greater complexity than researchers might encounter in either qualitative or quantitative research alone (further discussed in Chapter 2). Dilemmas associated with the research process become intensified when using mixed methods research for several reasons. First, the inherent need for data integration in a mixed methods design requires collecting and analysing *more data sources* and thus greater time and resources than is usually the case for either qualitative or quantitative research alone. Second, the generation of mixed insights previously inaccessible by either qualitative or quantitative research draws upon *diverse researcher expertise* and thus more often necessitates a research team to address the research problem. Third, on-demand *access to mixed methods-specific expertise* remains generally limited, and thus the researcher is often self-directing their own advocacy of the approach and development as a competent researcher. Thus, mixed methods researchers need a practical resource to support their responses to the dynamic conditions of complexity they encounter. To that end, this resource guides the transformations of established mixed methods research practices to be more complexity-sensitive (further discussed in Chapter 3).

The primary intent of this book is to provide access to the integrative thinking and actions underpinning six adaptive mixed methods research practices (described in Chapter 4–9). The description of the integrative thinking processes as preceding actions is essential, as these practices are not intended to be prescriptive; rather, the researcher must adapt to their unique research conditions. By describing examples of applying these practices, hopefully this book will open up the multiplicity of options suitable for engaging in your own mixed methods research process. With so many books available that are focused on designing and conducting mixed methods research, mixed methods researchers are sometimes inundated with choices yet lack access to the thinking necessary for guiding actions under varying conditions of complexity. My hope is that, by reading this book, you will gain an understanding of the usefulness of a complexity perspective for transforming mixed methods research practices under conditions of complexity. To that end, my aim is to instil a new way of thinking about the mixed methods research process reflective of possibilities rather than limited by current understandings and established practices. In Guiding Tip 1.1, an assistant professor at the University of Michigan (USA) whose interdisciplinary work fosters a real passion for methodology offers new ways of thinking about mixed methods research.



Guiding Tip 1.1

Tim Guetterman advising how to navigate the complexity of mixed methods research

Mixed methods research requires flexible thinking and creativity, reflective openness to disparate views, and seeing the value of mixed methods. At least, that is what I found in my own research about characteristics of mixed methods researchers. It might be helpful to think about when navigating complexity!

Positioning Myself

You need to know something of my background training, life experiences, and influential mentors in order to understand how I came to conceptualize a complexity-sensitive approach to mixed methods research and to write this guiding resource for adaptive practices. About 25 years ago, while I was training as a natural scientist in the area known as biological (or life) science, I used the tools for quantitative research that were common to my field to generate observational and empirical evidence. Then, in the 1990s, as I advanced my interests in global travel and natural phenomena as a secondary school classroom teacher in international and domestic educational contexts, I became concerned with the reliance on test scores to represent accurate and useful evidence of student learning. This led me to frequently record written comments describing evidence of learning alongside the individual numeric scores for my students in my grade book. Although I was required to produce a numeric score twice each term for report cards, I was surprised to find myself referring almost exclusively to the written comments in my other communications with students and parents. Subsequently, as a programme evaluator, I became even more convinced of the limitations of numeric data to capture the individual outcomes from participation in social programmes. These experiences led me to realize the need to seek additional expertise about research if I was to advocate for policy changes.

When I pursued graduate studies in the areas of educational assessment, evaluation, and measurement, I became aware of the usefulness of qualitative research for understanding human behaviour and investigating the why and how. At the same time, as I began to question the capacity for traditional approaches to programme evaluation to meet the informational needs of organizations operating in complex environments, I began to read about innovative theories that were being adopted within the discipline of organizational development. Over the years, as I delved into the worlds of qualitative inquiry and complexity science, I was mentored by experts such as Drs. Lyn Shulha, Nancy Hutchinson, Rena Uptis, Robert Stake, and Rebecca Luce-Kapler. A key implication from my qualitative case study dissertation in 2008, titled *Promoting Evaluation Use within Dynamic Organizations: A Case Study Examining Evaluator Behavior*, was reframing developmental evaluator practices to be more attentive and responsive to the complexity inherent in organizational environments (Poth, 2008).

Significantly, I also encountered the emerging field involving mixing qualitative and quantitative data during my graduate studies and sought to gain expertise by enrolling in a two-day workshop with Dr. John W. Creswell at the Annual *Qualitative Research Summer Intensive* (see researchtalk.com). I consider that fate played an important part in my development as a mixed methods researcher because, since that initial workshop in 2005, John and several members of the global mixed methods community have played an important mentorship role for me as a new faculty member at the University of Alberta. In particular, four experiences were key to developing my confidence and capacity to write this book: returning to teach the workshop in 2012 that I had initially taken at the Annual *Qualitative Research Summer Intensive* at the invitation of Research Talk's founder, Ray Maietta; working with John Creswell on the fourth edition of *Qualitative Inquiry & Research Design* (Creswell & Poth, 2017); co-guest-editing two mixed methods research-focused special issues of the *International Journal of Qualitative Methods* with Tony Onwuegbuzie (Poth & Onwuegbuzie, 2015, 2016); and being involved as a founding member of the Mixed Methods International Research Association (for historical descriptions, see Mertens, 2014; Poth, Fetters, & Molina-Azorin, 2018). As a result of having benefited from such mentorship, I have sought to 'pay it forward' over the past decade as a mixed methods researcher, instructor, and supervisor. Whenever opportunities arise, I have wanted to enhance methodological training in qualitative, quantitative, and mixed methods research by increasing the relevance of course and workshop content, the engagement in learning activities, and the alignment of assessments with what researchers need to know and do. I am surprised by the lack of accessible and practical guidance for researchers across the developmental learning progression, and I see the greatest need in the field of mixed methods research. I consider myself to be a pragmatist in my choice of research approaches and am aware of my own preferences as I strive to generate insights in ways that are appropriate to the research conditions.

This background explains how I have come to identify myself as an applied researcher working across diverse fields and research approaches with a commitment to enhancing access to practical guidance for mixed methods researchers working under varying conditions of complexity. It also provides a rationale for my definition of mixed methods research as requiring the integration of different types of data – quantitative and qualitative – and assumes that the collective contribution mitigates inherent weaknesses in either type of data. In writing this book, I have drawn on my background expertise in qualitative, quantitative, and mixed methods research approaches as an instructor, programme evaluator, and researcher undertaking studies as a lead, as a member of cross-disciplinary research teams, and as a supervisory mentor. Throughout this book, I include examples and have purposefully selected the featured studies from varied disciplines and perspectives in an effort to represent the diversity of the field. While my primary area of specialization is education, I have made concerted efforts to include literature and my own experiences beyond the areas of social and health sciences. In Practice Alert 1.2, I consider the key influences to my evolving thinking which underpin my interactions as a mixed methods researcher, and I invite you to do the same. In so doing, I have enhanced my understandings of how my instructional approaches to mixed methods research courses and workshops have been influenced by my reflections on traditional approaches to teaching about designing and conducting mixed methods research.



Practice Alert 1.2

What influences your interactions as a mixed methods researcher?

My teaching of mixed methods research has been closely tied with my thinking and practice. More than a decade ago – as I developed and began to facilitate mixed methods research courses, workshops, and seminars – my initial efforts focused on the foundational mixed methods research concepts, that is, *what* distinguishes mixed methods research. This was because these opportunities represented, for the vast majority of my participants, their first access to formalized learning about mixed methods research. To that end, many of the intended learning outcomes and instructional activities compared the distinctive characteristics of mixed methods research with either qualitative or quantitative research. This remains foundational to my approach to teaching introductory research methods, which is similar to the approach adopted by some texts to juxtapose mixed methods research with qualitative and quantitative research (e.g., Creswell, 2014; Johnson & Christensen, 2016). This approach continues to serve an important purpose of introducing researchers to mixed methods research as a third methodological option. The focus on distinguishing mixed methods research knowledge and skills is essential because it is simply not enough to be competent in qualitative and quantitative research.

My current teaching approaches with researchers who are familiar or even experienced with mixed methods research reflects a focus on applying understandings of the research process to varying conditions, that is, *how* to engage in mixed methods research and *why* use mixed methods for discovering innovative solutions. In so doing, my efforts not only respond to researchers' demand for opportunities to develop expertise specific to mixed methods but also develop the capacity to respond appropriately under varying conditions of complexity. This is similar to the approach adopted by some newer texts; for example, Creswell and Plano Clark (2018) and others in particular disciplines (in the health sciences, see Curry & Nunez-Smith, 2015) and guiding challenging aspects of the research process (e.g., integration using a particular mixed analysis strategy; see Bazeley, 2018).

Try this now – sketch your ideas about what have been the key influences in your thinking and interactions as a mixed methods researcher and consider the effects on your current research interests, your philosophical orientation to research, or your approaches to working with others.

Defining Conditions of Complexity and Innovations for Practice

To consider the conditions under which our traditional mixed methods research practice tendencies are an appropriate fit and the conditions under which these practices may be limiting and require innovations, we must begin by defining what we mean by these terms. So far in this chapter, I have referred to terms with differing frequency; whereas conditions of complexity have been used a number of times, innovation has been mentioned only sparingly. These differences are attributable to what I see as the 'overuse' and even 'misuse' of the term 'innovation' in much of my reading. Of course, you will note I was not deterred from using 'innovation' in the book title because of its importance to the purpose of the book.

The definitions and concepts I introduce here are further discussed in this first part of the book. A complexity-sensitive approach guides mixed methods researchers' responses to emergent and dynamic realities under conditions of complexity while engaging in the research process. I advance an organic mixed methods research process as including five interconnected, traditional research practice tendencies: defining problems; situating contexts; establishing capacities; determining designs; and generating insights. I conceptualize my approach as middle ground between the process-oriented and methodologically oriented approach to mixed methods research described by Plano Clark and Ivankova (2016). This is because I consider the logistical considerations in the dilemmas I had personally experienced while engaging in the practices involved in mixed methods research processes. In so doing, I draw upon the experiences of others in my consideration of the literature surrounding complexity and identifying the need for more adaptive practice tendencies. By understanding the indicators for varying conditions of complexity and the implications for mixed methods researchers we can recognize those conditions for which new, more adaptive practice tendencies are needed. In so doing, I set the stage for creating an openness in understanding the key characteristics of a complexity-sensitive approach to mixed methods research featured in this book. An open mind to new possibilities is featured in Guiding Tip 1.2, where the vice chancellor of the University of Western Australia (Perth) and professor of mental health at the University of Leeds (UK) offers advice for navigating the complexity of mixed methods research.



Guiding Tip 1.2

Dawn Freshwater advising openness to discovering new approaches to mixed methods research

Mixed methods research is built on a fundamental platform of openness to discovery, alternative and equally valid views, and entertains kaleidoscopic lenses through which to understand what it is to be human. That openness has never been more crucial.

Continuum of Complexity Conditions

You may already be familiar with some of the terms that have been advanced in the literature to describe the varying conditions under which research and evaluation can take place: simple, complicated, and complex. While I will use them here for illustrative purposes to begin our conversation, it is logical that I refute the use of these terms in this book because of my position that *all* research takes place under conditions of complexity. Instead I favour describing conditions along a continuum: low complexity, moderate complexity, and high complexity. Thus, I use 'low', 'moderate', and 'high' in this book to differentiate among varying levels of conditions of complexity. Examine Table 1.1 to learn about the indicators along the continuum of complexity conditions for six mainstays of mixed methods research practice. Our understandings of these indicators are naturally evolving, and the six traditional

Table 1.1 Indicators for continuum of complexity conditions for six mixed methods research practices

Research practices	Indicators for continuum of complexity conditions		
	Low	Moderate	High
Assessing conditions	Assumptions of stability and evidence of predictable influences	Some assumptions of stability and evidence of somewhat predictable influences	No assumption of stability and evidence of nonlinear influences
Articulating purposes	Identifiable mixing purpose and study need for integration can be grounded in literature	Discoverable mixing purpose and study need for integration can be somewhat grounded in literature	Yet-to-be-known mixing purpose and study need for integration can be difficult to pinpoint beyond innovation
Situating contexts	Definable and study boundaries describable	Generally definable and some study boundaries describable	Yet-to-be-defined systems and few boundaries describable
Establishing capacities	Identifiable expertise based on predetermined contributions	Typically known expertise based on collective contributions	Yet-to-be-known expertise based on emergent contributions
Implementing designs	High agreement for integration procedures and implemented as planned	Some agreement for integration procedures and some changes to plans during implementation	Yet-to-be-known integration procedures and implementation plans
Evaluating insights	Knowable outcomes produced by predictable legitimization strategies	Generally knowable outcomes produced by recognizable legitimization strategies	Unknowable outcomes produced by yet-to-be-known legitimization strategies

research practices may not capture all the tendencies that others have noted are important for mixed methods research.

In the literature, *simple* is a term used to describe conditions where ‘knowledge and experience tell you what to do and there is widespread agreement about what to do’ (Patton, 2010, p. 86). If a researcher assesses their study as having **low complexity**, several conditions have been met: the assumption of stability and evidence of predictable influences; the mixing purpose is identifiable and the study need for integration can be grounded in the literature; the research contexts are definable and describable; the necessary capacities involve identifiable expertise and predetermined contributions; the research design has high agreement for integration procedures and is implemented as planned; and the research outcomes are knowable and are generated using predictable integration strategies. In my experience, few studies are consistently assessed at low complexity, yet examples of such research problems are characterized as having established approaches for attaining predictable outcomes such as to distinguish among low- and high-ability readers. The study might rely on researchers with known expertise in using standardized assessments and experimental designs. In so doing, these procedures could be used again with a comparable study population within the same study boundaries with generally predictable results.

Complicated is a term used in the literature to describe conditions that are less predictable and whose outcomes and procedures for attaining the outcomes are less certain but still

able to be known. **Moderate complexity** often dictates that ‘more than one area of expertise is needed and these must therefore be coordinated and integrated’ (Patton, 2010, p. 87). For a researcher to assess their study as having moderate complexity, many of the following conditions are evident: some assumptions of stability and evidence of somewhat predictable influences; the mixing purpose is discoverable and the study need for integration can be somewhat grounded in literature; the research contexts are generally definable and some study boundaries describable; the necessary capacities are typically known expertise based on collective contributions; the research design has some agreement for integration procedures and some changes to plans during implementation; and the research outcomes are generally knowable and are generated using recognizable integration strategies. In my experience, most studies are assessed as moderately complex, and examples of such research problems tend to have evidence-based approaches for attaining the knowable outcomes, such as teaching someone to swim. The study might integrate diverse methods and disciplines to reach slightly different, yet recognizable outcomes. In so doing, these procedures could be adapted to compare across different approaches to swimming within similar study populations with somewhat predictable results.

Complex is a term used in the literature to describe conditions characterized by unpredictable outcomes and ‘high uncertainty and high social conflict ... so many factors and variables are interacting, many of them are not only unknown but *unknowable*’ (Patton, 2010, p. 90; emphasis in original). If a researcher assesses their study as having **high complexity**, several of the following conditions have been met: no assumption of stability and evidence of nonlinear influences; the mixing purposes are yet to be known and the study need for integration may be difficult to pinpoint beyond innovation; the research contexts are yet to be defined and few boundaries describable; the necessary capacities involve yet-to-be-known expertise based on emergent contributions; the research designs are yet-to-be-known integration procedures and implementation plans; and the research outcomes are unknowable and are generated using yet-to-be-known integration strategies. In my experience, few studies have been consistently assessed as high complexity; more commonly there is a mix across levels, yet as our practices become more complexity-sensitive, it is natural (and desirable) for the field to see an increased uptake of studies assessed as highly complex. High-complexity research problems require innovative approaches for tackling understudied yet highly pressing issues such as homelessness because of the many social and health factors that may be interacting with other factors that we have yet to understand. The expertise and procedures will be vastly different each time, with unknowable results.

A highly complex research problem that my colleague Jacqueline Pei and I are pursuing along with members of our Alberta Community and Clinical Research Team (ACCERT) involves examining the contributing factors and lived experiences of complex individuals involved in housing programmes, and specifically for individuals affected with fetal alcohol spectrum disorder (FASD). FASD is an umbrella term used to classify a range of disabilities caused by prenatal alcohol exposure, including physical, cognitive, emotional, and behavioural deficits (Pei, Denys, Hughes, & Rasmussen, 2011; Poth, Pei, Job, & Wyper, 2014). In the literature they are considered a particularly ‘difficult-to-house’ population because they can be initially ‘hard to reach’ and also hard to maintain in housing, often described as high risk for losing their housing status. You can imagine that this study requires generating understandings of the social and health needs of this population as well as increasing knowledge

regarding the existing health, community social services, and educational (among others!) supports for supporting success with this complex group. Among the challenges for us in beginning this work is how to begin. In the following chapters I will continue to share details about this ongoing work. Consider the challenges experienced by a Commonwealth scholar from the UK and doctoral candidate at Auckland University of Technology (New Zealand) when tackling complex problems requiring drawing upon diverse disciplinary and methodological expertise, described in Researcher Spotlight 1.2.



Researcher Spotlight 1.2

Amrit Dencer-Brown on mitigating the challenges of interdisciplinary mixed methods research under high-complexity conditions

The main challenge for me as a mixed methods researcher is engaging with academics in an inter- or cross-disciplinary fashion at my university. I am part of an Applied Ecology Institute, which generally focuses on pure science. There is not a big working space for mixed methods research, so I need to find ways to present my research in a context that is accessible to people working in quite distinctive and separate areas of research. This year is the first year we have run a social ecology course, and mixed methods fits very well into this research discipline. I hope that we have given our undergraduates a broader perspective on ways to carry out research using a variety of techniques that can span different disciplines. I am also part of two research groups conducting mixed methods research, so I guess we are paving the way for the future of mixed methods research at our university. I think it is very important for scientists to see a more holistic and integrated way of addressing complex problems through mixed methods research and for further validation of this emerging research field.

Niche for Complexity-Sensitive Approach

The limitations of the terms 'simple', 'complicated' and 'complex' become apparent when you consider your own life experiences. I draw upon my diverse teaching and research experiences to recognize that these examples of problems are simply different variations of complex situations. Throughout this book you will see the terms 'low complexity', 'moderate complexity' and 'high complexity' used to describe the varying mixed methods research conditions and my emphasis on the need to initially assess the research conditions before anything else. This initial step is essential for being able to gauge the extent to which the traditional mixed methods research practice tendencies are appropriate for the particular study conditions or whether new, adaptive practices will better position the researcher to respond to the dynamic influences characteristic of more complex study conditions. By recognizing the inherent complexity in our studies and adopting the six adaptive research practice tendencies, I model creative and integrative thinking that creates the potential for enhanced authenticity of research reporting. This is because we tend to report only what happened rather than the thinking and actions involved throughout the research. By documenting the

research process and the responses to changing conditions, I am able to be more reflective of the realities in which researchers operate and create accounts that are more authentic and useful for guiding researchers. Furthermore, the principles of complexity science as a theoretical framework guide the researcher to make sense of the dilemmas, conditions, and outcomes related to their experiences, the present opportunities, and the future possibilities.

I define the niche for a complexity-sensitive mixed methods research approach as providing practical guidance for researchers under varying conditions of complexity and supporting **innovation** in mixed methods research in six important ways:

- It promotes innovations in *researcher responsiveness* under varying complexity of mixed methods research conditions.
- It encourages innovations in *mixing purposes* when framing complex mixed methods research problems.
- It boosts innovations in *system considerations* when defining interrelated mixed methods research contexts.
- It inspires innovations in *design creations* when realizing agile mixed methods research procedures.
- It stimulates innovations in *capacity decisions* when developing emergence in mixed methods research interactions.
- It motivates innovations in *quality indicators* when assessing integration of mixed methods research outcomes.

In this first part of the book (Chapters 2 and 3), I recount how I came to identify the adaptive research practice tendencies that comprise a complexity-sensitive approach to mixed methods research through integrative thinking with complexity science. Through describing the theoretical underpinnings of complexity science, I engage in integrative thinking to advance an approach to mixed methods research that goes beyond the usual attempts to reduce, control, or simply ignore the effects of complexity. In Part II (Chapter 4–9), I will guide you in revisiting your underlying assumptions and in turn adapt some mixed methods research practice tendencies to the conditions encountered and thus adopt a more complexity-sensitive approach. Finally in Part III I will provide some closing commentary and ideas for future directions.

Audiences for the Book

This book is written for those with various roles and expertise in mixed methods research. The common element is an interest in adapting practices for mixed methods research under conditions of complexity. It may be that some of you recognize the demand for complexity-sensitive practices from your own experiences. These include (but are not limited to) the following:

- *Graduate (master's and doctoral) students* – the book could be used as a core text for graduate-level classes, mixed methods-focused workshops or independent learning. Examples of courses include introductory research courses focused specifically on mixed methods research or more generally on designs, or advanced research courses focused on mixed methods research, writing proposals, and programme evaluation. Because of its usefulness for guiding the pursuit of more complex mixed methods research problems, the text could be used throughout and beyond a graduate programme.
- *Instructors of mixed methods research courses or workshops* – the book could be used as the organizing framework for intended learning outcomes, as a guide to assessment methods, and as a text that can familiarize participants to the five complexity-sensitive mixed methods research practices.

- *Researchers who are relatively new to mixed methods research* – the book could be used to enhance addressing some of society's puzzling problems after reading an introductory text or participating in an introductory course, workshop or seminar and support planning for next steps.
- *Experienced mixed methods researchers who are familiar with the knowledge and skills required for planning, conducting, and reporting mixed methods research* – the book could be used to identify next steps in their learning progression beyond established practices by those who have already engaged in a study or the planning for one.
- *Mixed methods research team members* – the book could be used by those seeking practical guidance for mixed methods research teams tackling research under conditions of complexity and further developing their integrative capacity.
- *Research associations and communities embracing mixed methods research* – the book could be used to guide training, certificate programmes, and designations by providing members and instructors with a practice framework on which to base their professional learning initiatives.
- *Research managers who commission, supervise, and translate mixed methods research for policy, practitioner, and academic audiences* – the book could be used to guide learning about mixed methods research by organizational and advocacy team members.
- *Researchers who review mixed methods research grants or publications* – the book could be used to introduce the field of mixed methods research and to assess the quality of studies pursuing research under conditions of complexity in mixed methods research plans and reports.

Organization and Learning Features

This book is presented in three parts, to reflect the practical nature of the text. Part I (Chapters 1–3) introduces the essential foundations for this mixed methods research book focused on innovations under conditions of complexity, and begins with this chapter orienting the reader to the book. Chapter 2 familiarizes the reader with the usefulness of and essential characteristics of mixed methods research, phases and practices involved in an organic process, and introduces the dilemmas and demands for innovations and innovators under conditions of complexity. Chapter 3 describes the theoretical underpinnings for a complexity-sensitive mixed methods research approach through examining the opportunities for integrative thinking with complexity and introduces the six adaptive practices for guiding researchers. Each of the six chapters in Part II (Chapters 4–9) then focuses on one of the adaptive mixed methods research practices. For each practice, I provide access to the integrative thinking underpinning the complexity-sensitive approach and then describe the actions for responding with a complexity lens throughout the research process. The adaptive mixed methods research practices involve diagnosing the complexity of research conditions, framing complex research problems, defining interrelated research contexts, developing emergence in research interactions, realizing agile research integrations, and assessing the quality of research outcomes. The book concludes with Part III (Chapter 10) advancing onward considerations for complexity-sensitive mixed methods research focused on its distinctive niche, potential challenges, and final guidance. To optimize the design features in this book, you should not feel restricted to reading the chapters in order, but instead read ahead and return as you are compelled.

The learning features included in this book are intended to describe an approach that is relevant, accessible, and practical. Each chapter begins by outlining the key questions and terms the chapter addresses. The key questions have a practical focus, identifying the skills

you need and the knowledge necessary for executing those skills. The end-of-chapter check-in guides you in assessing the extent to which you have developed the intended knowledge and skills. Embedded within each chapter are practice alerts – opportunities for you to apply understandings to your own mixed methods research studies based on key learnings from my own perspective. Researcher spotlights provide you with access to the experiences and viewpoints of several prominent and emerging mixed methods researchers about key pressing and future challenges and possible ways we can better prepare mixed methods researchers for working under conditions of complexity. Guiding tips offer succinct advice from a variety of perspectives for navigating the complexity of mixed methods research. Visual organizers are used throughout the book for two purposes: to provide a ‘roadmap’ in advance of a written description, and to provide a summary of text. Featured complex mixed methods research studies are introduced later in this first chapter and revisited throughout the book as a means of bridging theory with article examples purposefully selected to represent a range of conditions of complexity. Readers should note that words in bold indicate the first time a key term is used throughout the book. Definitions of the key terms can be accessed through the Glossary (Appendix A). Words in italics indicate either a key term that has already appeared but is also important to the current chapter, or words or phrases highlighted for emphasis.

Each chapter concludes with a summary of key chapter concepts and a compilation of further reading recommendations so that you can access additional information and different perspectives essential for in-depth understanding. In the selections, I try to provide a global and interdisciplinary perspective. It is my intention that this book be as inclusive as possible in terms of language used, study populations, methodological approaches, and modes of inquiry. That said, space and time limitations mean that the breadth of what can be covered has often been limited in this text to those designs and methods that are most frequently used to generate qualitative and quantitative data. Readers, and especially students, should not feel limited by what is included. Rather, I hope this book provides a platform for further reading.

Introducing ways of assessing conditions of complexity and mixed methods research foundations, describing the integrative thinking and actions underpinning six complexity-sensitive practices, and advancing onward considerations for complexity-sensitive mixed methods research are essential in providing a resource that is relevant, accessible, and practical. My aim for this book is that it should support informed use of a complexity-sensitive approach to mixed methods research. The adaptive practices do not prescribe a path, but rather promote understanding that conditions of complexity are unique to each mixed methods study. Generating innovation in the form of mixed insights, integrative interactions, adaptive practices, and novel designs through the use of a complexity-sensitive approach to mixed methods research may help us solve some of society’s most pressing problems. Let us get started on the mixed methods research journey together.

Selection of Six Featured Mixed Methods Studies

This book features six mixed methods studies that address the practice gap in many textbooks. These also provide authentic examples of published articles representing a wide variety of research topics, authors, problems, designs, and locales. In all of these studies, the research took place under a continuum of complexity conditions. In varying ways, the need

for adaptive mixed methods research practices is reflected in each of the studies and provides a catalyst on which to advocate for complexity-sensitive approaches to mixed methods research. These six studies also represent research topics and problems that draw upon a range of disciplines, including education, justice, psychology, gender, technology, and health. I have deliberately chosen articles not authored by well-known mixed methods researchers. I wanted to feature studies that could be seen as feasible to conceptualize, realize, and publish, rather than ones by the superstars of mixed methods research. The articles represent diverse research locales (studies took place on six continents) and include the gamut of mixed methods research designs and data sources. Four articles appeared in the *Journal of Mixed Methods Research*, which is not a surprising source, given the rigorous peer-review process I know at first hand as an associate editor. None of these featured studies should be considered exemplars of a complexity-sensitive approach to mixed methods research – each one was chosen because it includes some traditional mixed methods research practice tendencies and provides the opportunity to demonstrate how a particular adaptive practice discussed in the book might take place. These articles are readily available on the companion website for this book. Table 1.2 summarizes the diversity of each study's details of research topics, disciplines, locales, and questions. A narrative summary can be read in the further readings section of this chapter, and in-depth discussions are embedded within subsequent chapters of this book.

Table 1.2 Summary of overall details for the six featured mixed methods studies

Study Reference	Research Topics	Research Disciplines	Research Locale	Research Question
Chui, W. H., & Cheng, K. K.-Y. (2017). Perceptions of fairness and satisfaction in lawyer–client interactions among young offenders in Hong Kong.	Law clients	Justice, Psychology	Hong Kong	How do young offenders perceive fairness and satisfaction towards their lawyers in Hong Kong's criminal justice system?
Colditz, J. B., Welling, J., Smith, N. A., James, A. E., & Primack, B. A. (2017). World vaping day: Contextualizing vaping culture in online social media using a mixed methods approach.	Vaping culture	Health, Technology	Global	What can contextualizing vaping culture in social media add to our understanding?
Dickson, V., Lee, C. S., & Riegel, B. (2011). How do cognitive function and knowledge affect heart failure self-care?	Heart care	Health	US	How does cognitive function and knowledge affect heart failure self-care?
Strudsholm, T., Meadows, L. M., Robinson Vollman, A., Thurston, W. E., & Henderson, R. (2016). Using mixed methods to facilitate complex, multiphased health research.	Leadership competencies	Health, Leadership	Canada	What public health leadership competencies could apply to public health practice across the country?

Study Reference	Research Topics	Research Disciplines	Research Locale	Research Question
Taylor, L. K., Merrilees, C. E., Corkalo Biruski, D., Ajdukovic, D., & Cummings, E. M. (2017). Complexity of risk: Mixed-methods approach to understanding youth risk and insecurity in postconflict settings.	Postconflict risk	Psychology, Education	Croatia	How does political violence affect youth, particularly in postconflict settings?
Zea, M. C., Aguilar-Pardo, M., Betancourt, F., Reisen, C. A., & Gonzales, F. (2014). Mixed methods research with internally displaced Colombian gay and bisexual men and transwomen.	Safe places	Gender, Health	Colombia	What does developing safe places involve for internally displaced Colombian gay and bisexual men and transwomen?

CHAPTER CHECK-IN

- Can you 'see' how this book is distinguished from other books in its focus on adaptive practices associated with a complexity-sensitive approach to mixed methods research?
 - Compare how the purpose for this book differs from at least two other mixed methods resources.
 - Compare how the audience for this book differs from at least two other mixed methods resources.
- Can you begin to conceptualize the usefulness of a complexity perspective for mixed methods researchers under varying research conditions?
 - Consider research you have done or are planning to do. Would the problem pursued be categorized as simple, complicated, or complex?
 - Consider the extent of your agreement with the author's assertion that 'all research should be considered as undertaken in varying conditions of complexity'.
- Can you begin to distinguish among the indicators for the continuum of complexity conditions for the six mixed methods practices in Table 1.1?
 - Consider research you have done or are planning to do. Would the research conditions be considered low, moderate, or high complexity?
 - How might your mixed methods research practices be adapted under conditions of higher complexity?
- Can you identify differences and similarities across the six featured studies in Table 1.2?
 - Compare the studies in terms of research topics, disciplines, and locales.

KEY CHAPTER CONCEPTS

This chapter orients the reader to this book and introduces the focus on complexity in mixed methods research, positions the need for this book, defines conditions of complexity and innovation, and explains the book organization and learning features. This orientation is foundational for introducing the demand for boosting innovations in mixed methods research discussed in the next chapter.

FURTHER READINGS

The following are the six featured studies that are readily available on the companion website for the textbook indicated with an asterisk. I strongly suggest you read them now because by referring to this series of six studies throughout the book, I avoid lengthy descriptions of the study details.

*Chui, W. H., & Cheng, K. K.-Y. (2017). Perceptions of fairness and satisfaction in lawyer–client interactions among young offenders in Hong Kong. *Journal of Mixed Methods Research, 11*(2), 266–285. doi: 10.1177/1558689815593834.

Drawing upon procedure justice theory, Wing Hong Chui and Kevin Kwok-Yin Cheng use an explanatory mixed methods design to examine the perceptions of fairness and satisfaction that young offenders have towards their lawyers in the Hong Kong criminal justice system. Particularly noteworthy is the article description of the legal profession and the local study context.

*Colditz, J. B., Welling, J., Smith, N. A., James, A. E., & Primack, B. A. (2017). World vaping day: Contextualizing vaping culture in online social media using a mixed methods approach. *Journal of Mixed Methods Research*. doi: 10.1177/1558689817702753.

The authors use a convergent parallel mixed methods design to contextualize vaping culture in social media. This article capitalized on both the quantitative breadth and qualitative depth of primary Twitter data globally, and used an innovative integration approach.

*Dickson, V., Lee, C. S., & Riegel, B. (2011). How do cognitive function and knowledge affect heart failure self-care? *Journal of Mixed Methods Research, 5*(2), 167–189. doi: 10.1177/1558689811402355.

The authors used a concurrent triangulation mixed methods design to explore how knowledge and cognitive function influence the self-care of 41 adult Colombian heart failure patients. This article is noteworthy for its conceptualization of self-care as a naturalistic decision-making process and for its cross-case integrated findings from in-depth interviews and standardized surveys.

*Strudsholm, T., Meadows, L. M., Robinson Vollman, A., Thurston, W. E., & Henderson, R. (2016). Using mixed methods to facilitate complex, multiphased health research. *International Journal of Qualitative Methods, 15*(1), 1–11. doi: 10.1177/1609406915624579.

The authors illustrate the benefits of using a multiphase mixed methods design to identify public health leadership competencies that could be applied to public health practice

across Canada. The article is noteworthy for its discussion of the challenges and opportunities encountered in its use of literature review, online survey, focus group webinars, and modified Delphi.

*Taylor, L. K., Merrilees, C. E., Corkalo Biruski, D., Ajdukovic, D., & Cummings, E. M. (2017). Complexity of risk: Mixed-methods approach to understanding youth risk and insecurity in postconflict settings. *Journal of Adolescent Research, 32*(5), 585–613. doi: 10.1177/0743558416684950.

The authors use an exploratory sequential mixed methods design to identify community-level risk factors and related emotional insecurity responses among youth in Vukovar, Croatia. The article reports how the initial focus group discussions with parents and adolescents were further explained by the quantitative youth surveys.

*Zea, M. C., Aguilar-Pardo, M., Betancourt, F., Reisen, C. A., & Gonzales, F. (2014). Mixed methods research with internally displaced Colombian gay and bisexual men and transwomen. *Journal of Mixed Methods Research, 8*(3), 212–221. doi: 10.1177/1558689814527941.

The multinational, interdisciplinary research team drew upon the framework of communicative action to explore the subjective, objective, and social worlds of displaced Colombian gay and bisexual men and transwomen through life history interviews and surveys. The article is noteworthy for its description of the research team's promotion of social change through egalitarian dialogue.

Apply your mixed methods knowledge with videos, activities, SAGE journal articles and project templates at <https://study.sagepub.com/poth>