Dilemmas and Opportunities for Mixed Methods Research Design: *Handbook* Introduction

Cheryl N. Poth

The *SAGE Handbook of Mixed Methods Research Design* (subsequently referred to as the *Handbook*) was developed to offer a global perspective of how researchers are leveraging the dilemmas and opportunities for mixed methods research design with the aim to inspire further innovations. The *Handbook* represents the culmination of sustained efforts over three years involving more than 80 mixed methods researchers from around the world to distil key learnings and guidance. Curating an inclusive collection was essential to capture the diversity of discussions and debates that abound in relation to just about everything about mixed methods research design—if you ask several researchers what it is, how we do it, where it begins and ends—I expect you will hear many different responses. Enriching our global mixed methods research community design conversation with learning about and from diverse perspectives contributes meaningfully to design practice innovations. My aim as *Handbook* Editor is to advocate for inclusion and innovation as I support and further mixed methods research design conversations that are useful for a global audience. The development of the *Handbook* was inspired by several questions including (but not limited to):

- What ought to be the scope of mixed methods research design?

- What mixed methods research design perspectives would benefit others to learn from and advance the field?
- What processes and outcomes ought to be involved in future-forward mixed methods research design practices?
- What recent practice advances ought to be incorporated into the design of future-forward mixed methods research?

Design has been a frequently discussed and debated topic within the field of mixed methods research (e.g., Tashakkori et al., 2021; Tashakkori & Teddlie, 2003, 2010) and I argue that the *Handbook* advances our design conversations in important and new ways. See the *Handbook* Conclusions (Chapter 37) for my revisit of these questions. I begin the Introduction to this *Handbook* with clarifying key terminology and perspectives that influenced its development.

KEY *HANDBOOK* TERMINOLOGY

By *mixed methods research design*, I refer to the emerging processes that initiate at a study's

conceptualization, that continue through to its conclusions and encompass the outcomes (e.g., proposals, publications) generated along the way. With this definition, I expand the conceptualization of mixed methods research design beyond the initial study formulation process and outcome. I use this definition to further explicate my view of the design of mixed methods research as paradoxically feasible and unwieldy:
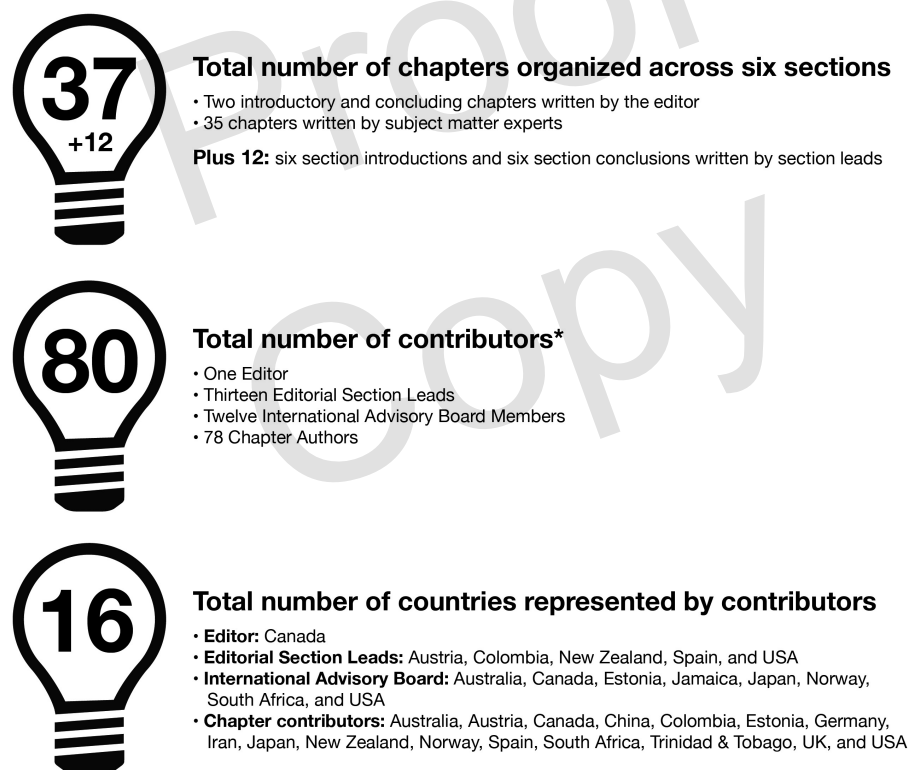
> Feasible because the design of mixed methods research has been widely described in the literature as necessary to initiate prior to beginning research for the purpose of planning research procedures, to continue throughout the research process for the purpose of describing the research logic, as well as to depict the procedures employed after the research is completed for reflecting on threats to validity and research integrity as well as for comparison with other similarly designed studies (e.g., Creswell & Plano Clark, 2018; Tashakkori

et al., 2021). Unwieldy because the design of mixed methods research is so ubiquitous in the literature, it is often difficult to pinpoint exactly what it entails and how these understandings have evolved over time. (Poth et al., 2022, p. 274)

The paradox is evident within the wide-ranging design topics and illustrative examples discussed throughout the *Handbook* chapters. To that end, this *Handbook* explores and addresses the question: What ought to be the scope of mixed methods research design?

KEY *HANDBOOK* PERSPECTIVES

I offer an overview of the *Handbook*'s key numbers in Figure 1.1 as evidence of its commitment to a global audience and practice-orientation. The

37 **+12** Total number of chapters organized across six sections
• Two introductory and concluding chapters written by the editor
• 35 chapters written by subject matter experts

Plus 12: six section introductions and six section conclusions written by section leads

80 Total number of contributors*
• One Editor
• Thirteen Editorial Section Leads
• Twelve International Advisory Board Members
• 78 Chapter Authors

16 Total number of countries represented by contributors
• **Editor:** Canada
• **Editorial Section Leads:** Austria, Colombia, New Zealand, Spain, and USA
• **International Advisory Board:** Australia, Canada, Estonia, Jamaica, Japan, Norway, South Africa, and USA
• **Chapter contributors:** Australia, Austria, Canada, China, Colombia, Estonia, Germany, Iran, Japan, New Zealand, Norway, Spain, South Africa, Trinidad & Tobago, UK, and USA

**Figure 1.1   An overview of the *Handbook* by key numbers**

Note: *Total represents unique contributors as many of the editorial Section Leads and International Advisory Board members were also chapter authors.

Source: Author created.

development of this *Handbook* involved more than 80 contributors who played various functions as chapter authors, Section Leads and International Advisory Board members, all aimed at increasing the relevance of this *Handbook* for a global audience. From its initial conception, I imagined this *Handbook* as an opportunity to bring together global perspectives in a curated collection to help mixed methods researchers navigate the design complexities they are likely to encounter. It was my intention for the *Handbook* to reflect diverse perspectives and divergent viewpoints because, as Fàbregues, Escalante-Barrios, et al. (2021) noted: "such engagement will lead to valuable insights that could lay the basis for further discussion needed to ensure the healthy development of the field" (p. 2). We asked subject matter experts to use illustrative examples to advance practical guidance in their chapters about different aspects of the complex processes involved in mixed methods research design. Together, this collection of 37 chapters plus Introductions and Conclusions for each of the six sections point to established as well as essential new and emerging mixed methods design practices that researchers should know about and be able to perform. To that end, this *Handbook* explores and addresses the question: What mixed methods research design perspectives would benefit others to learn from and advance the field?

A commitment to inclusion of global perspectives can be seen in the country of primary affiliation of *Handbook* contributors shown in Figure 1.2. The shading represents the 16 countries from which the chapter authors hail, and icons distinguish the location of the Section Leads, the Editor and International Advisory Board members. Note that the icons do not differentiate if more than one contributor is from the same location. Importantly, in addition to the geographical diversity of *Handbook* contributors, career stages are also represented; these include internationally renowned scholars, as well as those who are rapidly becoming established as innovators. Noteworthy is the less familiar map which I have used to represent the geographical locations of *Handbook* contributors. Figure 1.2 uses a 1954 Buckminster Fuller Airocean projection of the world map onto the surface of an icosahedron, which is a variant of the Dymaxion map (also known as Fuller map) to reduce the distortion of the relative size of areas in a flat drawing. The intention was for this projection to avoid having a "right way up", which supports the efforts to reflect diverse and novel perspectives in this *Handbook*.

After more than two decades as an instructor, researcher, reviewer and author, I have come to recognize three essential influences on my thinking about mixed methods research design. I share

◎ Editor
✿ Section Leads
● International Advisory Board Members
🐟 Countries with Chapter Contributors
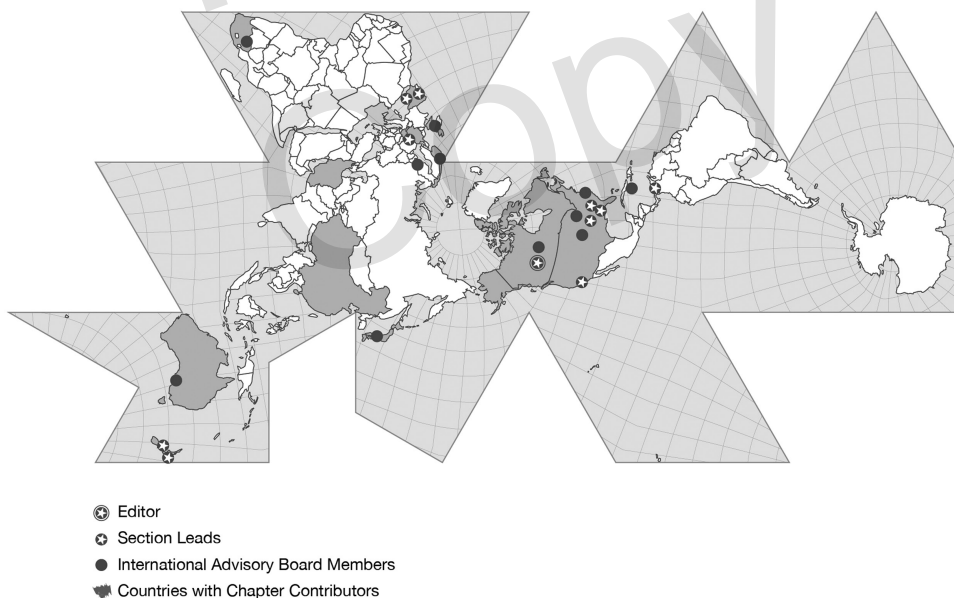
Figure 1.2   Geographical locations of *Handbook* contributors on a 1954 Buckminster Fuller Airocean projection of the world map

Source: Author created.

them here to make explicit my epistemological orientation to the *Handbook*.

1   ***Integration as the distinguishing feature of mixed methods research design****. Without evidence of integration in a design, I do not consider it to be mixed methods research. In this way, I preserve important distinctions between multimethod and mixed methods that others have also made explicit in descriptions of key characteristics (i.e., Creswell & Plano Clark, 2018), thoughtful arguments (i.e., Greene, 2015), and discussions of mixed analysis strategies (i.e., Hitchcock & Onwuegbuzie, 2020). I also recognize that my thinking continues to evolve with experience and commit to making such evolutions explicit in my writing. A key example is that while I have defined mixed methods research design in the current *Handbook* as necessitating the integration of qualitative and quantitative data, I am becoming more open to arguments highlighting the constraints introduced by categorizing data as either qualitative or quantitative. I attribute this shift to my experiences with data formats, such as Tweets and videos, that, in my view, can transcend this dichotomy. I might need to revisit my current conceptions of integration within mixed methods research design in the near future. I consider monitoring evolutions in my thinking as a key part of engaging as a lifelong mixed methods research learner.

2   ***Representing diverse perspectives is key to creating an inclusive global mixed methods research community****. Without seeking others who think differently or work in unfamiliar research contexts and valuing their perspectives, we risk ill-informed assumptions about the applicability of design practices across diverse contexts. Through seeking and valuing diverse perspectives, I commit to an inclusive approach where I advocate for opportunities for authors to represent voices, experiences and perspectives that have not previously been represented in publications such as this *Handbook*. I acknowledge that there remains much work to be done within the field of mixed methods research and the growing body of literature to guide this work— for example, mixed methods research design intersections with Indigenous, community-based, and participatory research approaches (e.g., DeJonckheere et al., 2019; Mertens, 2023). I am eager to learn from others and assimilate those

learnings in future researcher, author, reviewer and editorial roles.

3   Accessible opportunities for respectful sharing and discussing of emerging ideas are central to advancing mixed methods research design practice. As mixed methods research professionals, we risk stagnation and isolation without opportunities to share and receive feedback on our ideas. Technology-mediated interactions, such as webinars and emails, have greatly expanded the frequency and accessibility of opportunities that at one time could only occur in-person at conferences and meetings. I commit to engaging with others respectfully in forming relationships while interacting and supporting others. I am mindful of the need for and an advocate of public scholarship to increase audience reach through (but not limited to) open access mixed methods research-focused public talks and publications.

Now to explore the why, what and how of the *Handbook*.

WHY DOES THE *HANDBOOK* FOCUS ON DESIGN?

The *Handbook's* focus on mixed methods research design is timely to promote innovation in our thinking and actions. The *Handbook* is made possible by building upon the previous contributions of others discussing the topic of mixed methods research design, including the trailblazing work of Abbas Tashakkori and Charles Teddlie as the Editors of the 2003 and 2010 editions of *The SAGE Handbook of Mixed Methods of Social & Behavioral Research*, and the many chapters and articles that have since been published. In a virtual special issue focused on the design of mixed methods research, I and colleagues describe some of the remaining design challenges that researchers face alongside a discussion of seminal and contemporary design advancements (Poth et al., 2022). Key among those challenges involves the lack of transparency in mixed methods research design descriptions that is highlighted as a key quality criterion (e.g., Fàbregues, Molina-Azorin, et al., 2021; Hirose & Creswell, 2022; O'Cathain, 2010; Onwuegbuzie & Poth, 2016). Noteworthy, Guetterman and colleagues (2022) define quality as a broader concept than validity and legitimation that refers to "how well a mixed methods study was conducted through scientifically accepted

design and procedures" (p. 2). To this end, we support the advocacy efforts calling for authors to report the essential design aspects, including "what they did, how they did, and why they did it" (Zhou & Wu, 2022, p. 275).

I, along with others, consider mixed methods research designs as prevalent, recognizable and rapidly evolving, and researchers need to be prepared for the changing conditions in which they will conduct studies. Access to information about how researchers plan for and navigate changeable conditions would help guide researchers in preparing more authentic design descriptions in their proposals and reports. Mixed methods researchers need to be able to think and act "complexively" and creatively in research design. Over the last decade, the ever-increasing recognition and use of mixed research approaches to solve complex societal issues have created great interest in and opportunities for novel thinking about designs. I advocate for further innovation in mixed methods research design as we tackle societal issues within increasingly complex conditions. The key characteristic of complex conditions is its changeability, meaning that mixed methods research designs can no longer be assumed to be fixed and conducted in predetermined ways. Instead, researchers must pay close attention and adapt appropriately to the changing study conditions. The adaptive practice ideas advanced in my book, *Innovations in Mixed Methods Research: A Practical Guide to Integrative Thinking with Complexity* (Poth, 2018), have gained acceptance as researchers increasingly recognize the complexity inherent in their studies. I point to the wise guidance from Pat Bazeley (2018) that "this complexity, evident across many fields of action and inquiry, demands methods able to investigate a problem from multiple viewpoints, with flexibility to adapt to changing situations, yet able to produce credible results convincing to diverse audiences" (p. 4). To that end, this *Handbook* explores and addresses the question: What processes and outcomes ought to be involved in contemporary mixed methods research design?

WHO ARE THE AUDIENCES FOR THIS *HANDBOOK*?

As an essential resource for anyone interested in the contemporary, emerging and evolving practice of mixed methods research and scholarship, this *Handbook* is written for those with various roles and experience in mixed methods research

design. These include (but are not limited to) graduate students, instructors and learners 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. In particular:

- *New and established researchers and evaluators* will find the up-to-date literature as well as the historical and future-forward design discussions helpful for a field orientation.
- *Instructors and learners enrolled in courses and workshops* will find the in-depth descriptions and discussions of illustrative studies helpful for bridging theory with real-world practice examples.
- *Research teams* will find the discussions and examples of innovative ways to collaborate on designs helpful for realizing desired outcomes.

To that end, this *Handbook* explores and addresses the question: What recent practice advances ought to be incorporated into the design of future-forward mixed methods research?

WHAT UNIQUE INSIGHTS DOES THIS *HANDBOOK* OFFER?

Individual chapters offer practical guidance grounded in illustrated examples from authors' own experiences and existing literature related to a specific mixed methods research design topic.

Each of the six *Handbook* sections has its own Introduction highlighting the contribution of each chapter, which I encourage you to read. Here in the *Handbook* Introduction, Chapter 1 and in Figure 1.3, I offer an overview of each section by briefly describing what you can expect and how the sections complement each other and the unique perspectives afforded by a curated collection of chapters. By studying the information below and the individual section introductions, readers can locate the chapters relevant to their needs. Readers may also discover additional chapters that pique their interest. Readers should not feel restricted to reading the chapters in order, but instead to read ahead and return as they are compelled. The *Handbook* Conclusions (Chapter 37) alludes to ideas woven across the sections to describe four emerging and exciting future directions for mixed methods research design conversations and practices.
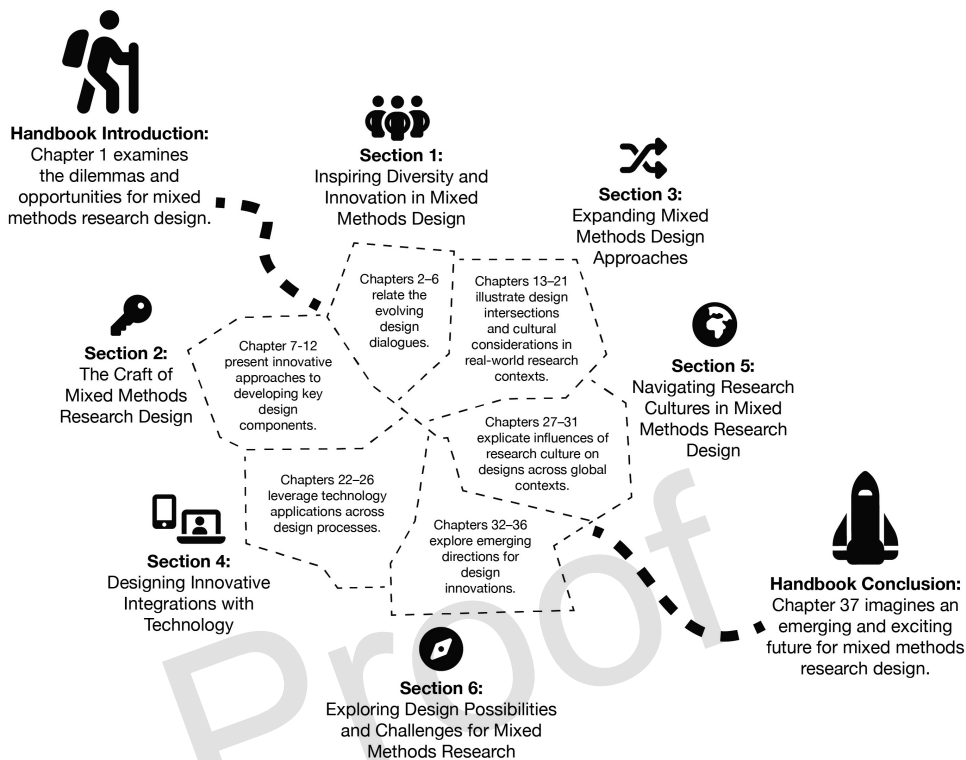
Figure 1.3 Overview of *Handbook* chapters and unique contributions of sections

Source: Author created.

Section 1: Inspiring Diversity and Innovation in Mixed Methods Design

With a focus on design diversity and innovation, Section 1's chapters relate the evolving design dialogues from authors who have experienced and contributed to the many crossroads of mixed methods research design practices. Section co-leads Sergi Fàbregues and José F. Molina-Azorin begin the section Introduction, "Evolving Tensions and Conversations in Mixed Methods Research Design Approaches", with an orientation to the diversity and lack of consensus around the construct of mixed methods designs and suggest that the continuing coexistence of multiple perspectives serves the field well. Chapters 2–4 discuss design typologies and approaches, whereas Chapters 4–6 focus on the design of mixed methods for advocacy and knowledge. In the Section 1 Conclusion, "Future Tensions and Design Conversations in the Mixed Methods Field", Molina-Azorin and Fàbregues point to the highly changeable mixed methods research design

conceptions that are likely to evolve alongside design practice expansions. We can infer from this first section that mixed methods research design developments are likely to help researchers solve specific problems and promote a better, more equitable society.

In Chapter 2, "Revisiting Mixed Methods Research Designs Twenty Years Later", John W. Creswell and Vicki L. Plano Clark explore the evolution of their prevalent design typologies and reflect on their changing perspectives of mixed methods research design. In Chapter 3, "Mixed Methods Design in Historical Perspective: Implications for Researchers", Joseph A. Maxwell makes the case for interactive design approaches that are more inclusive of studies that meet the criteria for mixed methods research (even when the authors may not identify them as such) as benefiting the field. Chapter 4, "Mixed Methods Designs to Further Social, Economic and Environmental Justice" by Donna M. Mertens, details the potential of mixed methods designs informed by a transformative lens to realize research that is closely

aligned with notions of social, economic and environmental justice. In Chapter 5, "Developments in Mixed Methods Designs: What Have Been the Dominant Pathways and Where Might They Take Us in the Future?", after revisiting four key historical influences on the evolution of designs, Katrin Niglas encourages flexible thinking, and mixed methods research design adaptations and adjustments as useful for addressing wicked programs and grand societal challenges. In Chapter 6, "The Role of Methodological Paradigms for Dialogic Knowledge Production: Using a Conceptual Map of Discourse Development to Inform MMR Research Design", Dawn Freshwater and Jane Cahill describe a conceptual map of discourse development. The conceptual map is used to explain the epistemological process and relational activity through which the mixed methods research paradigm and knowledge is generated, emphasizing critical reflection for informing research design.

Section 2: The Craft of Mixed Methods Research Design

To detail the craft of mixed methods research design, Section 2's chapters present innovative approaches and practical guidance for navigating key design components. In Section 2 Introduction, "The Craft of Mixed Methods Research Design", co-leads Sophia L. Johnson and Judith Schoonenboom aptly describe the craft attitude as needed for addressing the complexity inherent in designing and conducting mixed methods research. They frame the craft of mixed methods design as a product of the interplay among an iterative and adaptive decision-making process (*techne*), continuous reflection on the ethical implications of those decisions (*phronesis*), and general knowledge (*episteme*). In the Section 2 Conclusion, "The Craft of Mixed Methods Research Design", Schoonenboom and Johnson highlight the key contribution of Chapters 7–12 to elucidate a craft approach to mixed methods design decisions, which are complex, multi-step, detailed, and iterative. The Section 2 chapters offer practical navigation guidance to researchers in crafting mixed methods research design.

In Chapter 7, "Embracing Emergence in Mixed Methods Designs: Theoretical Foundations and Empirical Applications", Manuela De Allegri and Julia Lohmann feature a discussion of definitions and theoretical foundations for emergent mixed methods designs, and guide its implementation through their illustrative healthcare design example in Malawi. In Chapter 8, "The Methods-Inference Map: Visualizing the Interactions Between Methods and Inferences in Mixed Methods Research", Judith Schoonenboom describes the methods-inference map using an illustrative secondary education example in New Zealand that offers practical visualization guidance for the interactions between methods and inferences in mixed methods research. In Chapter 9, "Towards Sampling Designs that are Transparent, Rigorous, Ethical and Equitable (TREE): Using a Tree Metaphor as a Sampling Meta-Framework in Mixed Methods Research", Julie A. Corrigan and Anthony J. Onwuegbuzie demonstrate the TREE meta-framework for developing sampling designs using a multi-country higher education COVID-19 study. In Chapter 10, "Data Integration as a Form of Integrated Mixed Analysis in Mixed Methods Research Designs", Susanne Vogl introduces a conceptualization of integration that considers the blurring boundaries between qualitative or quantitative data classifications. She uses focus groups with kids to illustrate design innovations addressing complex mixed methods research questions in action. In Chapter 11, "Ethical Issues and Practices for Mixed Methods Research in an Era of Big Data", Roslyn Cameron and Heinz Herrmann weave ethical considerations within their discussion of a conceptual framework depicting the technology relationships in big data across two studies. These studies illustrate the Fourth Industrial Revolution era involving digital transformations, including the adoption of artificial intelligence and algorithms across systems and societies. In Chapter 12, "Building the Logic for an Integrated Methodology: Mixed Method Grounded Theory as an Example of Constructing a Methodology to Guide Design and Integration", Elizabeth G. Creamer, Cherie D. Edwards, and Cassandra McCall demonstrate how to integrate mixed methods into another research methodology by identifying compatibilities and tensions between the philosophical assumptions and core procedures of the methodologies involved. Their fully integrated approach to methodology integration embeds multilevel mixing from its conception, as demonstrated by their illustrative mixed methods–grounded theory study involving Canadian mental health organizations.

Section 3: Expanding Mixed Methods Design Approaches

To expand what is currently known about how we might meaningfully use cultural contexts and intersections with other design types to inform mixed methods research practice innovations, Chapters 13–21 illustrate design intersections and cultural considerations in real-world research

contexts. In the Section 3 Introduction, "Expanding Beyond Typology-Based Mixed Methods Designs", section co-leads Peggy Shannon-Baker and Jessica T. DeCuir-Gunby describe their aim for Section 3 as expanding typology-based mixed methods design across the two themes: cultural considerations in mixed methods design and design combinations of mixed methods with other methodological approaches. Together, the nine chapters feature embedded illustrative examples to showcase how their innovative designs look in practice across global contexts and how the design contributes to practice advancements beyond their current study contexts. In the Section 3 Conclusion, "Moving Beyond Tradition: The Need for Expanded and Culturally Relevant Mixed Methods Design Typologies", DeCuir-Gunby and Shannon-Baker imagine a future for mixed methods research with calls for more culturally relevant design practices throughout mixed methods research designs. In so doing, they imagine adapting mixed methods designs to their cultural contexts, encouraging participatory approaches, and increasing researcher reflexivity.

Chapters 13–16 describe cultural considerations in mixed methods design. In Chapter 13, "Exploring Interlocking Relationships of Race, Gender and Class with an Intersectionality-Informed Mixed Methods Research Design Framework", Jenny Douglas describes the contribution of the theoretical frame of intersectionality within a mixed methods study of cigarette smoking among African-Caribbean teen girls to the development of relevant and appropriate public health research and promotion initiatives addressing inequalities in healthcare delivery. In Chapter 14, "Indigenous Cultural Values Instrument Development: Using Mixed Methods Research", Mehdi Taghipoorreyneh elucidates how a sequential mixed methods research design integrated the cultural values of three major ethno-cultural groups (i.e., Malay, Chinese and Indian) within the multicultural country of Malaysia. He details the mixed methods procedures involving a three-round Delphi study and correspondence analysis of scale for generating the necessary reliability and validity evidence for the Indigenous Cultural Values instrument. In Chapter 15, "What Can Mixed Methods Partnerships Learn from Kaupapa Māori Research Principles?", Peter Rawlins, Philippa Butler, Spencer Lilley, and Maggie Hartnett describe the principles underpinning Kaupapa Māori research, an Aotearoa New Zealand Indigenous research approach, in the context of mixed methods research. The He Awa Whiria (braided river) metaphor, which conceptualizes how Western and Indigenous research approaches can work together to create a whole that is more

than the sum of the parts, holds great potential for guiding indigenous-involved and culturally appropriate mixed methods design practices that are transferable beyond their study context. In Chapter 16, "Prioritizing Cultural Responsiveness in Mixed Methods Research and Team Science with Underrepresented Communities", Tera R. Jordan and Maya Bartel relate a team-based mixed methods research design prioritizing cultural responsiveness with underrepresented communities. The authors advance the need for effective cross-disciplinary teamwork to tackle increasingly complex societal issues and inequality in research. Gleaned from a comprehensive review of relevant literature and experiential reflection, this chapter offers novel insights, practical strategies and innovative solutions for engaging underrepresented communities in mixed methods research.

Chapters 17–21 detail design combinations of mixed methods with other methodological approaches. In Chapter 17, "Using Participatory Methods in Randomized Controlled Trials of Complex Interventions", Jenevieve Mannell and Audrey Prost highlight the enormous value of participatory qualitative methods in randomized controlled trials (RCT) for advancing mixed methods evaluation design practices of complex interventions. The authors' illustrative example elucidates the embedded mixed methods design of a cluster RCT to evaluate an intervention to prevent violence against women in Samoa that uses participatory methods to ensure appropriate randomization procedures, inform outcome measurement and engage stakeholders in interpreting the results using visual images. In Chapter 18, "Illustrating the Mixed Methods Phenomenological Approach (MMPR)", Joanne Mayoh, Talia Thompson and Shanlee Davis advance the use of MMPR for complementarity purposes and demonstrate its potential for supporting equity, diversity and inclusion using an example to explore physical activity and quality of life in adolescents with Turner syndrome. In Chapter 19, "Intersection of Mixed Methods and Case Study Research (MM+CSR): Two Design Options in Educational Research", Loraine D. Cook and Vimala Judy Kamalodeen use higher education examples from the Caribbean context to distinguish the key features and future potential for case study mixed methods (CS-MMR) and mixed methods case study (MM–CSR). In Chapter 20, "Harnessing Mixed Methods for Research Instrument Development and Legitimation", Vanessa Scherman and Lisa Zimmerman describe the value of integration and advance practical tools for guiding mixed methods instrument development. In Chapter 21, "Mixed Methods-Grounded Theory: Best Practices for Design and Implementation", Michelle C. Howell

Smith, Wayne A. Babchuk and Timothy C. Guetterman advance a set of strategies, guidelines or best practices to help guide mixed methods-grounded theory research practice.

Section 4: Designing Innovative Integrations with Technology

To design innovative integrations with technology and advance new possibilities, Section 4's chapters leverage technology applications across design processes. In "Designing Innovative Integrations with Technology", Section Lead Timothy C. Guetterman asks readers if they have "considered how technology can help to achieve integration in mixed methods research" (p. XX). He goes on to define integration and explain how the Section 4 description evolved to focus on technology after reading the initial chapter drafts. Together, the collection of Chapters 22–26 demonstrates how software, technology and technology-oriented research offer additional ways to mine and mix data. In the Section 4 Conclusion, "The Untapped Potential of Technology for Integration", Guetterman outlines future directions to promote the use of technology in mixed methods research integrations. A unique contribution to the conversation involves his descriptions of advocacy roles for mixed methods research practitioners in the field, those who act as methodologists tasked with advancing practices, and software developers who are working on new ways to embed technology in mixed methods research design practices.

In Chapter 22, "Using Software for Innovative Integration in Mixed Methods Research: Joint Displays, Insights, and Inferences with MAXQDA", Udo Kuckartz and Stefan Rädiker explore the use of software in mixed analysis and identify interactivity in their illustrative examples as a key factor for software-based integration and joint display representation. In Chapter 23, "Grounded Text Mining Approach: An Integration Strategy of Grounded Theory and Textual Data Mining", Mitsuyuki Inaba and Hisako Kakai provide practical guidance through the description and real-data illustration of four iterative stages of a grounded text-mining approach using focus group interview data obtained from Japanese graduate students and professors of nursing. In Chapter 24, "A 'Mixed Methods Way of Thinking' in Game-based Research Integrations", Lisbeth M. Brevik uses game-based mixed methods research with teenage boys as co-researchers in Norway to demonstrate the value of integrating various voices and perspectives—and the differences between them—when studying complex phenomena. In Chapter 25, "Integrating Secondary Data from Ethnically and Racially Minoritized Groups in Mixed Methods Research", Daphne C. Watkins and Natasha C. Johnson examine the challenges and propose solutions for guiding the integration of secondary data from ethnically and racially marginalized groups into mixed methods research designs. In Chapter 26, "Beyond the Joint Display in Mixed Methods Convergent Designs: A Case-Oriented Merged Analysis", Carolina Bustamante offers practical guidance for selecting cases of exceptional teachers of Spanish participating in an online professional development program and using graphics to facilitate insights.

Section 5: Navigating Research Cultures in Mixed Methods Design

To guide how researchers navigate research cultures in mixed methods research, Chapters 27–31 explicate how research culture influences designs across global research contexts. Authors were asked, to the extent possible, to make explicit the ways their designs are informed by cultural influences and how their designs and practices adapted to their unique research contexts. Section co-lead Elizabeth Creamer in "From Margin to Center The Design Implications of Cultural Component with Mixed Methods", highlights the elusive nature of the concept of culture and the difficulties faced by researchers in recognizing cultural influences on their designs. In the Section 5 Conclusion, "Future Directions for Research Cultures in Mixed Methods Designs", section co-lead Elsa Lucia Escalante-Barrios recognizes this section's significant and relevant contributions to design conversations advancing complex designs where features were determined by unique characteristics of cultural groups. She also emphasizes the need to make visible the ongoing methodological dialogues to consolidate new ways of implementing mixed methods.

In Chapter 27, "Culturally Responsive Mixed Methods Evaluation Design", Jori N. Hall and Ayesha S. Boyce discuss the essential role of researcher reflexivity in their illustrative example of a culturally responsive mixed methods evaluation of a US-based STEM project. A key contribution of this chapter involves recognizing the various influences of culture on and within the evaluation from the individuals (i.e., evaluators and stakeholders) involved to the geographical (i.e., US) and disciplinary (i.e., STEM) contexts for the evaluation. Importantly, Hall and Boyce call for considering

the applicability of their culturally responsive mixed methods stance with values-engaged, equity-focused, and anti-racist commitments and acknowledge culturally responsive stances as necessary and credible frameworks for mixed methods inquiry. In Chapter 28, "Integrating a Four-Step Japanese Cultural Narrative Framework, Ki-Shou-Ten-Ketsu, into a Mixed Methods Study", Taichi Hatta explicates how a cultural narrative framework from Japan, *ki-shou-ten-ketsu*, informed the analysis of a qualitative dialogue in a mixed methods study of cancer treatment. In Chapter 29, "Leveraging Mixed Methods Community-based Participatory Research (MMCBPR) in Diverse Social and Cultural Contexts to Advance Health Equity", P. Paul Chandanabhumma, Annika Agni and Melissa DeJonckheere illustrate the value of MMCBPR to meaningfully engage socially and culturally diverse US Indigenous communities and advance well-being and health equity. In Chapter 30, "Cultural Diversity in Intervention Designs: A Chinese Illustrative Example*",* Hongling Chu, Xuejun Yi and Huieming Liu illustrate the impacts of cultural diversity on large- scale mixed methods intervention studies by describing a health-prevention process evaluation conducted in 120 villages across five provinces in culturally diverse rural China. In Chapter 31, "Examining the Influences of Spanish Research Culture in Systematic Observation with Mixed Methods", M. Teresa Anguera, Eulàlia Arias-Pujol, Francisco Molinero and Luca Del Giacco explicate how observational methodology as mixed methods is influenced by the Spanish research cultural context where it takes place.

Section 6: Exploring Design Possibilities and Challenges for Mixed Methods Research for the Future

To imagine future possibilities for mixed methods research, Chapters 32–36 explore emerging directions for design innovations by identifying and discussing how new things are coming together in ways we have not yet seen, or how existing things are coming together in new ways. In the Section 6 introduction, "Exploring Possibilities and Challenges for Mixed Methods Research for the Future", section co-leads Peter Rawlins and Maggie Hartnett orient readers to three threads (i.e., evidence, people, and technology) and the interconnections among those threads that they asked authors to address. In the Section 6 Conclusions, "Where to Next in Exploring

Possibilities and Challenges for Mixed Methods Research for the Future," Rawlins and Hartnett revisit the key threads to discuss the ideas advanced by each of the chapters and connect them with their own lived experiences.

In Chapter 32, "Visualizing the Process: Using Visuals to Teach and Learn Mixed Methods Research", Peggy Shannon-Baker demonstrates their use of visuals for building emerging researchers' capacities. In Chapter 33, "Toward the Future Legitimacy of Mixed Methods Designs: Responsible Mixed Methods Research for Tackling Grand Challenges for the Betterment of Society", José F. Molina-Azorin and Michael D. Fetters advocate the use of mixed methods designs for the betterment of society and guide researchers in achieving academic, practical and social impact using illustrative examples addressing timely grand challenges. In Chapter 34, "Realizing Methodological Potentials and Advantages of Mixed Methods Research Design for Knowledge Translation", Nataliya V. Ivankova, Jami L. Anderson, Ivan I. Herbey, Linda A. Roussel and Daniel Kim enhance translational research by its intersection with mixed methods as an integrative thinking guide for addressing complex knowledge translation problems. In Chapter 35, "Opportunities and Challenges for a Transdisciplinary Mixed Methods Research Futur*e*", Mandy Archibald relates the possibilities of transdisciplinary mixed methods research arguing its usefulness as a collaborative approach for addressing wicked social problems. In Chapter 36, "Mapping Design Trends and Evolving Directions Using the *SAGE Handbook of Mixed Methods Research Design*", John Creswell, Cheryl N. Poth and Peter Rawlins convey mixed methods design trends represented by the *SAGE Handbook of Mixed Methods Research Design* and use a roadmap metaphor to describe four evolving directions for mixed methods research design.

Handbook Conclusions

Finally, I conclude the *Handbook* with a short chapter, "An Emerging and Exciting Future for Mixed Methods Research Design: *Handbook* Conclusions". In discussing four design topics, I weave my own perspectives with ideas alluded to in the *Handbook* sections and individual chapters illustrating some evolving landscapes of design terminology, illuminating many complex influences on design practices, representing diverse design perspectives and assimilating practice evolutions in design education. I speculate about the challenges likely to be encountered for each topic

and suggest actions aimed at moving the field forward. I conclude by advocating that both creativity and openness are vital for inspiring the design of mixed methods research applicable for global contexts and the education of mixed methods researchers capable of design innovations for the yet unknown future.
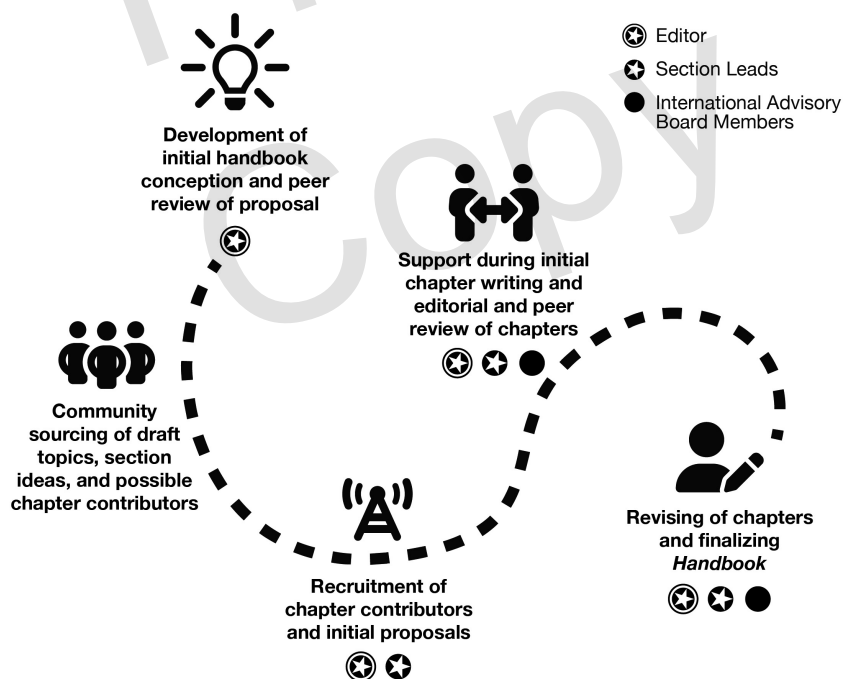
WHAT INFLUENCED THIS *HANDBOOK'S* DEVELOPMENT?

Central influences on the development of this *Handbook* involve key events, decisions and people as well as a commitment to diversity, equity and inclusion (DEI). While my description of these influences represents a departure from what is typical to include in a handbook's introductory chapter, my inclusion reflects a commitment to transparency about this *Handbook's* development. It is my hope that making explicit details such as how chapter topics were decided and how contributors came to be involved can provide an example for others to follow in future publications. I hope it ultimately opens doors and

opportunities for new perspectives and contributors to become involved in future discussions and publications and for the global mixed methods research community to benefit and learn from the description of this *Handbook*'s development.

Key Events, Decisions and People

As I reflected upon the key events, decisions and people influencing the development of this *Handbook,* I began to sketch what now appears as Figure 1.4. In representing the development as a path, it is important to note that the sequence of the key events is non-linear and both influencing to and influenced by the people involved in each key event. This *Handbook* resulted from of a unique set of circumstances involving myself as the Editor working closely with 13 dedicated Section Leads and a 12-member International Advisory Board who together have generated a product that otherwise would have been impossible. I use the metaphor of a symphony composer and conductor to describe my role as *Handbook* Editor. My editor role involved supporting the development of the sections and integrating them

Figure 1.4   Key events, decisions and people influencing the development of this *Handbook*

Source: Author created.

into a cohesive handbook. Readers should note the essential role of the chapter authors to make possible the 'performance' of this *Handbook*.

The launching event involved the editor developing a handbook proposal that was subsequently subject to peer review and feedback. The proposal required making the case for this *Handbook's* focus on mixed methods research design and detailing potential chapter topics and contributors. In this work, I relied on two sources for inspiration: my previous interactions with global mixed methods research community members and my reading of novel mixed methods research publications. I tracked, over several previous years, ideas for design topics that emerged from conversations at conferences and during workshops as well as from reading literature. I also noted people I met and heard present at various in-person and virtual conferences and webinars who were introspective in their examination of design experiences, dilemmas, and insights. As an example, I consulted notes I made after seeking out to speak with Jenny Douglas in 2019 at the *3rd Mixed Methods Research Caribbean Conference* held in Trinidad and Tobago about an intersectional-informed mixed methods study she had completed. Likewise, I spoke with Taichi Hatta at the 2019 *Mixed Methods International Research Association Asia Regional Conference* in Hamamatsu, Japan about his recent cultural narrative framework. Note that while these researchers joined this *Handbook* as subject matter experts and served as lead chapter authors, not all researchers who appeared in the initial proposal were then invited to contribute. I credit the community sourcing of contributors (see next section for details) that played an essential role in expanding my network of potential *Handbook* contributors.

Having secured a publishing contract for this *Handbook* based on the initial proposal, I then recruited Section Leads and an International Advisory Board. As an interdisciplinary group of 13 established authors, Section Leads shaped each of the six *Handbook* sections and worked closely and tirelessly with me as Editor and with the chapter authors within their sections. The 12-member International Advisory Board representing a range of established and emerging scholars from varied disciplines and geographical locations helped identify design topics and potential chapter authors. They also played a vital role in supporting the development of chapters by providing constructive feedback as peer reviewers.

A community-sourcing approach informed how we (i.e., the Editor, Section Leads and International Advisory Board members) worked together to increase the real-world relevance of the design practices discussed in this *Handbook*. We did this by seeking input from diverse members of the global mixed methods research community about the design dilemmas they experienced and their perspective of areas of design practice in need of further development. We also sought ideas about who might be suitable for writing on these design topics and developed systems to work as efficiently and effectively as possible with one another. Together, the input shaped the questions that *Handbook* sections sought to examine, the design topics covered by individual chapters, and the subject matter experts ultimately invited to contribute a chapter. The resulting *Handbook* reflects a mix of chapters that are authored by newly established or familiar authors, solely or in pairs and teams. These chapter contributors then worked tirelessly with the Editor, editorial Section Leads and International Advisory Board members for readers to benefit from their lived design experiences and expertise.

Together, the Editor and Section Leads extended invitations to authors to submit chapter proposals on specific topics. We invited authors to negotiate the focus of the topic and describe the illustrative examples they would use to offer practical guidance. In recruiting authors and design topics for the *Handbook*, we were mindful to provide space for both new ideas and for disagreements with established ones. Once agreement about the foundational elements of the chapter was reached, a chapter template and writing guidelines were provided to the authors along with a submission deadline approximately six months henceforth. Throughout the initial chapter development, the Editor and Section Leads interacted regularly to discuss and support authors. Once chapters were deemed ready for peer review, a chapter author contract was extended and the Editor organized the in-depth review involving the Editor, Section Leads and two peers to provide constructive feedback to authors. Peer reviewers were usually International Advisory Board members. When required, we sought additional perspectives from specific content experts. An editorial letter was compiled to guide the chapter revisions. In some cases, more than one round of revisions was supported. As part of the finalizing process, the Editor embedded suggestions for cross-referencing among *Handbook* chapters. As Editor, I saw cross-referencing as important to help readers make connections within and across the *Handbook* chapters and sections. Once authors reviewed the cross-referencing suggestions and prepared files for submission, the chapter was deemed to be

finalized. Once all the chapters were submitted, production involving copy-editing, typesetting, proofing and marketing began!

Actioning A Commitment to Diversity, Equity and Inclusion (DEI)

Inclusion efforts of *Handbook* contributors with diverse perspectives as well as *Handbook* chapters advancing equitable design practices and featuring illustrative examples reflective of the wide-ranging contexts in which mixed methods research design takes place are a few of the ways we actioned DEI during its development and in this *Handbook* itself. I note the need for future efforts to further expand the diverse perspectives, equitable practices and illustrative examples included in this *Handbook*. I believe these efforts are vital to increasing the impact of mixed methods research.

Chapters advancing equitable design practices can be seen in discussions of design approaches that empower stakeholders and promote ethical research practices appear across the *Handbook* leveraging— for example, an innovative TREE sampling framework (Chapter 9), Maori-involved mixed methods research in New Zealand (Chapter 15), student involvement as co-researchers (Chapter 24), integration of secondary data from ethnically and racially marginalized groups (Chapter 25), and mixed methods community-based participatory research with diverse US Indigenous communities (Chapter 29). We have a lot to learn from experts advancing equitable design practices and impactful experiential accounts, and the *Handbook* aimed to provide this access.

Chapters featuring illustrative examples reflective of the wide-ranging contexts in which mixed methods research design takes place can be seen in the more than 50 unique study contexts providing practical guidance here. It is noteworthy that more than half of the illustrative examples featured in this *Handbook* take place in contexts beyond North America. This introduces readers to mixed methods research contexts that may be less familiar and gives access to experiential accounts of real-world design processes to help them navigate their own cultural research contexts—for example, obstetric services in Malawi (Chapter 7), cigarette smoking among African-Caribbean teen girls (Chapter 13), violence prevention against women in Somalia (Chapter 17), challenges experienced by nursing graduate students and professors in Japan (Chapter 23) and communications during psychotherapy interactions in Spain (Chapter 31). Again, there are many more to explore. I leave you here to embark on a mixed methods research design journey!

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