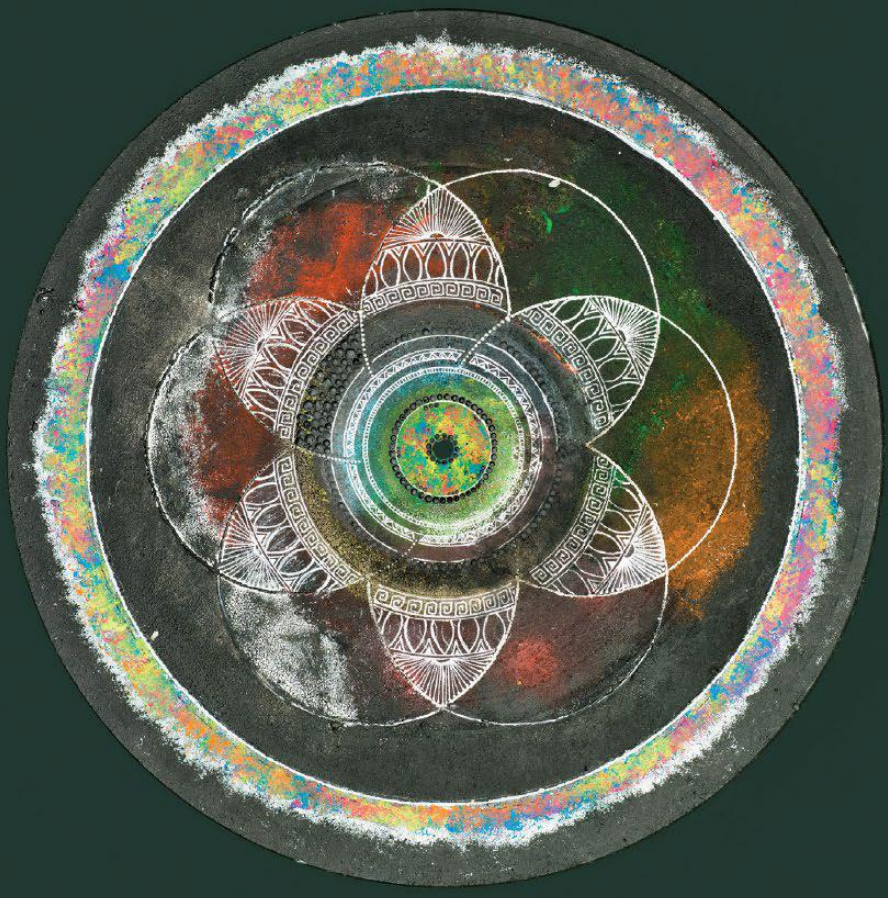
JOHN W. CRESWELL • J. DAVID CRESWELL



FIFTH EDITION

RESEARCH DESIGN

Qualitative, Quantitative, and Mixed Methods Approaches

RESEARCH DESIGN

FIFTH EDITION

I dedicate this book to all of my mentees and former students over the years who have engaged in this fascinating process of research and who have welcomed my suggestions for improving their scholarly works. I also welcome my son, J. David Creswell, a noted psychologist and researcher at Carnegie Mellon University, as my coauthor.

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

RESEARCH DESIGN

Qualitative, Quantitative, and Mixed Methods Approaches

FIFTH EDITION

John W. Creswell
Department of Family Medicine
University of Michigan

J. David Creswell
Department of Psychology
Carnegie Mellon University

SAGE

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

FOR INFORMATION:

SAGE Publications, Inc.
2455 Teller Road
Thousand Oaks, California 91320
E-mail: order@sagepub.com

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

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

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

Acquisitions Editor: Helen Salmon
Content Development Editor: Chelsea Neve
Editorial Assistant: Megan O'Heffernan
Production Editor: David C. Felts
Copy Editor: Amy Marks
Typesetter: C&M Digitals (P) Ltd.
Proofreader: Eleni-Maria Georgiou
Indexer: Stepping Stones Indexing Services
Cover Designer: Janet Kiesel
Marketing Manager: Shari Countryman

Printed in the United States of America

Library of Congress Cataloging-in-Publication Data

Names: Creswell, John W., author. | Creswell, J. David, author.

Title: Research design : qualitative, quantitative, and mixed methods approaches / John W. Creswell, PhD, Department of Family Medicine, University of Michigan, and J. David Creswell, PhD, Department of Psychology, Carnegie Mellon University.

Description: Fifth edition. | Los Angeles : SAGE, [2018] | Includes bibliographical references and index.

Identifiers: LCCN 2017044644 | ISBN 978-1-5063-8670-6 (pbk. : alk. paper)

Subjects: LCSH: Social sciences—Research—Methodology. | Social sciences—Statistical methods.

Classification: LCC H62 .C6963 2018 | DDC 300.72/1—dc23
LC record available at https://lccn.loc.gov/2017044644

17 18 19 20 21 10 9 8 7 6 5 4 3 2 1

Brief Contents

Detailed Contents

Analytic Contents of Research Techniques

Chapter 1. The Selection of a Research Approach

- Determining your research approach
- Identifying a worldview with which you are most comfortable
- Defining the three types of research approaches
- Using quantitative, qualitative, and mixed methods designs and methods

Chapter 2. Review of the Literature

- Assessing whether your topic is researchable
- Using steps in conducting a literature review
- Using computerized databases available for reviewing the literature
- Developing a priority for types of literature to review
- Designing a literature map
- Writing a good abstract of a research study
- Using important elements of a style manual
- Defining terms
- Employing a model for writing a literature review

Chapter 3. The Use of Theory

- Testing causal claims in quantitative research
- Identifying variables in a quantitative study
- Defining the nature of a quantitative theory
- Using a script to write a theoretical perspective into a quantitative study
- Considering the types of theories used in qualitative research

- Placing theories in a qualitative study
- Placing a theoretical lens into a mixed methods study

Chapter 4. Writing Strategies and Ethical Considerations

- Assessing the structure of a proposal for qualitative, quantitative, and mixed methods studies
- Using writing strategies for drafting a proposal
- Developing a habit of writing
- Constructing umbrella thoughts, big thoughts, little thoughts, and attention thoughts in writing
- Developing writing consistency through the hook-and-eye technique
- Using principles of writing good prose
- Anticipating ethical issues in many phases of the research process

Chapter 5. The Introduction

- Writing an abstract for a study
- Exploring differences among quantitative, qualitative, and mixed methods introductions
- Using the deficiency model for writing an introduction
- Designing a good narrative hook
- Writing about the research problem
- Summarizing the literature about a research problem
- Pointing out deficiencies in past literature
- Considering audiences that may profit from your study

Chapter 6. The Purpose Statement

- Using a script for writing a qualitative purpose statement
- Considering how the script would change depending on your qualitative design

- Using a script for writing a quantitative purpose statement
- Considering how the script would change depending on your quantitative design
- Using a script for writing a mixed methods purpose statement
- Considering how the script would change depending on your mixed methods design

Chapter 7. Research Questions and Hypotheses

- Writing a script for a qualitative central question
- Considering how this script would change depending on the qualitative design
- Writing a script for quantitative research questions and hypotheses
- Considering how this script would change depending on the quantitative design and the different types of hypotheses
- Using a model for descriptive and inferential quantitative questions and hypotheses
- Writing scripts for different forms of research questions for a mixed methods study

Chapter 8. Quantitative Methods

- Using a checklist for survey research to form topic sections of a survey procedure
- Employing steps in analyzing data for a survey procedure
- Writing a complete survey methods discussion
- Using a checklist for experimental research to form sections for an experimental procedure
- Identifying the type of experimental procedure that best fits your proposed study
- Drawing a diagram of experimental procedures
- Identifying the potential internal validity and external validity threats to your proposed study

Chapter 9. Qualitative Methods

- Using a checklist for qualitative research to form topic sections of a procedure
- Stating the basic characteristics of qualitative research
- Determining how reflexivity will be included in a proposed study
- Weighing the different types of data collected in qualitative research
- Employing steps in the qualitative data analysis process
- Establishing validity in qualitative research

Chapter 10. Mixed Methods Procedures

- Stating a definition and the characteristics of mixed methods research
- Using a convergent mixed methods design
- Using an explanatory sequential mixed methods design
- Employing an exploratory sequential mixed methods design
- Using one of the complex mixed methods designs
- Choosing which design is best for a mixed methods study

Preface

Purpose

This book advances a framework, a process, and compositional approaches for designing a proposal or research project for qualitative, quantitative, and mixed methods research in the human, health, and social sciences. The ascendency of qualitative research, the emergence of mixed methods approaches, and the growth of quantitative designs have created a need for this book's unique comparison of the three approaches to inquiry. This comparison begins with preliminary consideration of philosophical assumptions for all three approaches, a review of the literature, an assessment of the use of theory and conceptual frameworks in research approaches, and reflections about the importance of writing and ethics in scholarly inquiry. The book then addresses the key elements in the process of designing and conducting a research project: writing an introduction; stating a purpose or research aims for the study; identifying research questions and hypotheses; and advancing methods and procedures for data collection, analysis, and interpretation. At each step in this process, the reader is taken through qualitative, quantitative, and mixed methods approaches.

Audience

This book is intended for students and faculty who seek assistance in preparing a plan, proposal, or research project for a scholarly journal article, a dissertation, a thesis, or an application for funding. At a broader level, the book may be useful as both a reference book and a textbook for courses in research methods. To best take advantage of the design features in this book, the reader needs a basic familiarity with qualitative and quantitative research; however, terms will be explained and defined and recommended strategies advanced for those needing introductory assistance in the design process. Highlighted terms in the text and a glossary of the terms at the back of the book provide a working language for understanding research. This book also is intended for a broad audience in the human, health, and social sciences. Readers' comments from the past four editions suggest that individuals using the book come from many disciplines and fields. We hope that researchers in fields such as marketing, management, criminal justice, communication studies, psychology, sociology, K–12 education, higher and postsecondary education, nursing, family medicine, health services research, global health, behavioral health, urban studies, family research, and other fields of study will find this fifth edition useful.

Format

In each chapter, we share examples drawn from varied disciplines. These examples are drawn from books, journal articles, dissertation proposals, and dissertations. Though our primary specialization is in educational psychology, the health sciences, and in psychology, the illustrations are intended to be inclusive of many fields. They reflect issues in social justice and examples of studies with marginalized individuals in our society as well as the traditional samples and populations studied by researchers. Inclusiveness also extends to methodological pluralism in research today, and the discussion incorporates alternative philosophical ideas, diverse modes of inquiry, and numerous procedures.

This book is not a detailed method text; instead, we highlight the essential features of research design. We have attempted to reduce research to its essential core ideas so that researchers can plan a thorough and thoughtful study. The coverage of research designs is limited to frequently used forms: surveys and experiments in quantitative research; narrative research, phenomenology, grounded theory, ethnography, and case studies in qualitative research; and convergent, explanatory sequential, and exploratory sequential designs in mixed methods research. Although students preparing a dissertation proposal should find this book helpful, topics related to the politics of presenting and negotiating a study with review committees are addressed thoroughly in other texts.

Consistent with accepted conventions of scholarly writing, we have tried to eliminate any words or examples that convey a discriminatory (e.g., sexist or ethnic) orientation. Examples were selected to provide a full range of gender and cultural orientations. Throughout the text we do not favor either qualitative or quantitative research. Indeed, we have intentionally altered the order of qualitative and quantitative examples throughout the book. Readers should also note that in the longer examples cited in this book, many references are made to other writings. Only the reference to the work we use in the illustration will be cited, not the entire list of references embedded within any particular example. As with earlier editions, we have maintained features to enhance the readability and understandability of the material: bullets to emphasize key points, numbered points to stress key steps in a process, and longer examples of complete passages with annotations to highlight key research ideas that are being conveyed by the authors.

In this fifth edition of the book, new features have been added in response to developments in research and reader feedback:

- In this edition, we shape the discussion not only around designing a *proposal* for a *research project* but also around the steps in designing a *research study*. Thus, the emphasis on designing a research study (as opposed to focusing only on a proposal) is slightly larger for this edition than in past editions.

- We have added more information about the epistemological and ontological assumptions as they relate to research questions and methods.
- In the worldview section, we now include more on the transformative worldview.
- In the methods discussion, we have added more on specific approaches such as case studies, participatory action research, and visual methods in qualitative research.
- Also in the qualitative methods, we have added information about social media and online qualitative methods. Also, we have added more information on memoing and on reflexivity.
- In the mixed methods, we now incorporate information about action research (participatory research) and program evaluation.
- In the respective methods chapters, we have included more on qualitative and quantitative data analysis software.
- In the theory section, we have added information about causality, and then incorporated its relationship to statistics in the quantitative methods.
- For our quantitative, qualitative, and mixed methods sections, we have incorporated sections on writing discussion sections into each of these methodologies.
- We have incorporated new information into all of our methods chapters—quantitative, qualitative, and mixed methods. Our mixed methods chapter now reflects the latest advances in the field.
- Throughout the book, we have cited updated editions of research methods books that have emerged since the last edition and added current references and additional readings.

Outline of Chapters

This book is divided into two parts. Part I consist of steps that researchers need to consider *before* they develop their proposals or plans for research. Part II discusses the various sections used to develop a scholarly research proposal for a thesis, dissertation, or a research report.

Part I. Preliminary Considerations

This part of the book discusses preparing for the design of a scholarly study. It contains Chapters 1 through 4.

Chapter 1. The Selection of a Research Approach

In this chapter, we begin by defining quantitative, qualitative, and mixed methods approaches. We then discuss how philosophy, designs, and methods intersect when one uses one of these approaches. We review different philosophical stances; advanced types of qualitative, quantitative, and mixed methods designs; and then discuss the methods associated with each design. We also consider the factors that go into the choice of an approach to research. Thus, this chapter should help proposal developers decide whether a qualitative, quantitative, or mixed methods approach is suitable for their proposed research project.

Chapter 2. Review of the Literature

It is important to extensively review the literature on your topic before you design your proposal. Thus, you need to begin with a researchable topic and then explore the literature using the steps advanced in this chapter. This calls for setting a priority for selecting material from the literature, drawing a visual map of studies that relate to your topic, writing good abstracts, employing skills learned from using style manuals, and defining key terms. This chapter should help researchers thoughtfully consider relevant literature on their topics and start compiling and writing literature reviews.

Chapter 3. The Use of Theory

Theories serve different purposes in the three approaches inquiry. In quantitative research, they provide a proposed explanation for the relationship among variables being tested by the investigator. In qualitative research, they may often serve as a lens for the inquiry or they may be generated during the study. In mixed methods studies, researchers employ them in many ways, including those associated with quantitative and qualitative approaches. This chapter helps researchers consider and plan how theory might be incorporated into their studies.

Chapter 4. Writing Strategies and Ethical Considerations

It is helpful to have an overall outline of the topics to be included in a proposal or research study before you begin writing. Thus, this chapter begins with different outlines for writing proposals. The outlines can be used as models depending on whether your proposed study is qualitative, quantitative, or mixed methods. Then we convey several ideas about the actual writing of the proposal, such as developing a habit of writing, and grammar ideas that have been helpful to us in improving our scholarly writing. Finally, we turn to ethical issues and discuss these not as abstract ideas, but as considerations that need to be anticipated in multiple phases of the research process.

Part II. Designing Research

In Part II, we turn to the components of designing the research proposal. Chapters 5 through 10 address steps in this process.

Chapter 5. The Introduction

It is important to properly introduce a research study. We provide a model for writing a good scholarly introduction to your proposal. The chapter begins with designing an abstract for a study. This is followed by developing an introduction to include identifying the research problem or issue, framing this problem within the existing literature, pointing out deficiencies in the literature, and targeting the study for an audience. This chapter provides a systematic method for designing a scholarly introduction to a proposal or study.

Chapter 6. The Purpose Statement

At the beginning of research proposals or projects, authors mention the central purpose or intent of the study. This passage is the most important statement in the entire research process, and an entire chapter is devoted to this topic. In this chapter, you learn how to write this statement for quantitative, qualitative, and mixed methods studies, and you will be provided with scripts that help you design and write these statements.

Chapter 7. Research Questions and Hypotheses

The questions and hypotheses addressed by the researcher serve to narrow and focus the purpose of the study. As a major signpost in a project, the set of research questions and hypotheses needs to be written carefully. In this chapter, you will learn how to write both qualitative and quantitative research questions and hypotheses, as well as how to employ both forms in writing mixed methods questions and hypotheses. Numerous examples serve as scripts to illustrate these processes.

Chapter 8. Quantitative Methods

Quantitative methods involve the processes of collecting, analyzing, interpreting, and writing the results of a study. Specific methods exist in both survey and experimental research that relate to identifying a sample and population, specifying the type of design, collecting and analyzing data, presenting the results, making an interpretation, and writing the research in a manner consistent with a survey or experimental study. In this chapter, the reader learns the specific procedures for designing survey or experimental methods that need to go into a research proposal. Checklists provided in the chapter help to ensure that all steps are included.

Chapter 9. Qualitative Methods

Qualitative approaches to data collection, analysis, interpretation, and report writing differ from the traditional, quantitative approaches. Purposeful sampling, collection of open-ended data, analysis of text or images (e.g., pictures), representation of information in figures and tables, and personal interpretation of the findings all inform qualitative methods. This chapter advances steps in designing qualitative procedures into a research proposal, and it also includes a checklist for making sure that you cover important procedures. Ample illustrations provide examples from narrative studies, phenomenology, grounded theory, ethnography, and case studies.

Chapter 10. Mixed Methods Procedures

Mixed methods involves the collection and "mixing" or integration of both quantitative and qualitative data in a study. It is not enough to only analyze your qualitative and quantitative data. Further analysis consists of integrating the two databases for additional insight into research problems and questions. Mixed methods research has increased in popularity in recent years, and this chapter highlights important developments and provides an introduction to the use of this design. This chapter begins by defining mixed methods research and the core characteristics that describe it. Then the three core designs in mixed methods research—(a) convergent, (b) explanatory sequential, and (c) exploratory sequential—are detailed in terms of their characteristics, data collection and analysis features, and approaches for interpreting and validating the research. Further, these core designs are employed within other designs (e.g., experiments), within theories (e.g., feminist research), and within methodologies (e.g., evaluation procedures). Finally, we discuss the decisions needed to determine which one of the designs would be best for your mixed methods project. We provide examples of the core designs and include a checklist to review to determine whether you incorporated all of the essential steps in your proposal or project.

Designing a study is a difficult and time-consuming process. This book will not necessarily make the process easier or faster, but it can provide specific skills useful in research, knowledge about the steps involved in the process, and a practical guide to composing and writing scholarly research. Before the steps of the process unfold, we recommend that proposal developers think through their approaches to research, conduct literature reviews on their topics, develop an outline of topics to include in a proposal design, and begin anticipating potential ethical issues that may arise in the research. Part I begins with these topics.

Companion Website

The SAGE edge companion site for *Research Design*, Fifth Edition, is available at **https://edge.sagepub.com/creswellrd5e**

SAGE edge for Students provides a personalized approach to help students accomplish their coursework goals.

- **Mobile-friendly quizzes** test understanding of the concepts from each chapter
- **Videos featuring John W. Creswell** and others curated from **the SAGE Research Methods platform** expand on important topics in research design
- **SAGE Journal articles** plus accompanying exercises provide opportunities to apply concepts from each chapter
- **Sample research proposals and templates** offer further guidance on research design

SAGE edge for Instructors supports teaching by making it easy to integrate quality content and create a rich learning environment.

- **Sample syllabi** assist in structuring and preparing a course
- **Editable, chapter-specific PowerPoint® slides** offer ease and flexibility in creating a multimedia presentation
- A diverse range of prewritten and editable **test questions** help assess progress and understanding
- **Lecture notes** highlight key concepts from each chapter and provide a helpful reference and teaching tool
- **Chapter-specific writing and peer review exercises** emphasize critical thinking and application of the concepts
- **Discussion questions and group activities** launch classroom interaction and encourage students to engage further with the material
- All **figures and tables** from the book available for download

Acknowledgments

This book could not have been written without the encouragement and ideas of the hundreds of students in the doctoral-level Proposal Development course that John taught at the University of Nebraska-Lincoln for over 30 years. Specific former students and editors were instrumental in its development: Dr. Sharon Hudson, Dr. Leon Cantrell, the late Nette Nelson, Dr. De Tonack, Dr. Ray Ostrander, and Diane Wells. Since the publication of the first edition, John has also become indebted to the students in his introductory research methods courses and to individuals who have participated in his qualitative and mixed methods seminars. These courses have been his laboratories for working out ideas, incorporating new ones, and sharing his experiences as a writer and researcher. In addition, John wants to thank his staff over the years in the Office of Qualitative and Mixed Methods Research at the University of Nebraska-Lincoln who have helped to conceptualize content in this book and now those in the Department of Family Medicine at the University of Michigan. John is especially indebted to the scholarly work of Dr. Vicki Plano Clark, Dr. Ron Shope, Dr. Kim Galt, Dr. Yun Lu, Dr. Sherry Wang, Amanda Garrett, and Dr. Alex Morales.

In addition, we are grateful for the insightful suggestions provided by the reviewers for SAGE. We also could not have produced this book without the generous support and encouragement of our friends at SAGE. SAGE is and has been a first-rate publishing house. We especially owe much to our former editor and mentor, C. Deborah Laughton (now of Guilford Press), and to Lisa Cuevas-Shaw and Vicki Knight. Now we are working under the talented guidance of Helen Salmon, who has been most supportive of our work and who has encouraged us throughout the process. Lastly, we want to thank all of the SAGE staff with whom we have had the pleasure to work. We have grown together and helped to develop research methods as a distinguished, worldwide field. At SAGE, we have also benefited from the contributions of reviewers to this fifth edition: Clare Bennett, University of Worcester; Kelly Kennedy, Chapman University; Therese A.G. Lewis, Northumbria University; Andrew Ryder, University of North Carolina Wilmington; Tiffany J. Davis, University of Houston; Lora L. Wolff, Western Illinois University; Laura Meyer, University of Denver; Andi Hess, Arizona State University; and Audrey Cund, University of the West of Scotland.

About the Authors

John W. Creswell, PhD, is a professor of family medicine and co-director of the Michigan Mixed Methods Research and Scholarship Program at the University of Michigan. He has authored numerous articles and 28 books on mixed methods research, qualitative research, and research design. While at the University of Nebraska-Lincoln, he held the Clifton Endowed Professor Chair, served as director of a mixed methods research office, founded SAGE's *Journal of Mixed Methods Research*, and was an adjunct professor of family medicine at the University of Michigan and a consultant to the Veterans Administration health services research center. He was a Senior Fulbright Scholar to South Africa in 2008 and to Thailand in 2012. In 2011, he co-led a national working group on mixed methods practices at the National Institutes of Health, served as a visiting professor at Harvard's School of Public Health, and received an honorary doctorate from the University of Pretoria, South Africa. In 2014, he was the president of the Mixed Methods International Research Association. In 2015, he joined the staff of Family Medicine at the University of Michigan. John has been teaching research methods courses for the past 40 years.

J. David Creswell, PhD, is an associate professor of psychology and director of the Health and Human Performance laboratory at Carnegie Mellon University. Much of his research is quantitative in nature, and focuses on understanding what makes people resilient under stress. He has published over 50 peer-reviewed articles, co-edited the *Handbook of Mindfulness* (2015, Guilford), and received early career awards for his research from the Association for Psychological Science (2011), the American Psychological Association (2014), and the American Psychosomatic Society (2017). These research contributions came from a childhood and early adulthood of discussing research methodology with his dad, so this book now extends a collaboration going back many years! David has been teaching research methods courses for the past 9 years.

PART

I

This book is intended to help researchers develop a plan or proposal for a research study. Part I addresses several preliminary considerations that are necessary before designing a proposal or a plan for a study. These considerations relate to selecting an appropriate research approach, reviewing the literature to position the proposed study within the existing literature, deciding on whether to use a theory in the study, and employing—at the outset—good writing and ethical practices.

CHAPTER

1 The Selection of a Research Approach

Research approaches are plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation. This plan involves several decisions, and they need not be taken in the order in which they make sense to us and the order of their presentation here. The overall decision involves which approach should be used to study a topic. Informing this decision should be the philosophical assumptions the researcher brings to the study; procedures of inquiry (called **research designs**); and specific **research methods** of data collection, analysis, and interpretation. The selection of a research approach is also based on the nature of the **research problem** or issue being addressed, the researchers' personal experiences, and the audiences for the study. Thus, in this book, *research approaches, research designs,* and *research methods* are three key terms that represent a perspective about research that presents information in a successive way from broad constructions of research to the narrow procedures of methods.

The Three Approaches to Research

In this book, three research approaches are advanced: (a) qualitative, (b) quantitative, and (c) mixed methods. Unquestionably, the three approaches are not as discrete as they first appear. Qualitative and quantitative approaches should not be viewed as rigid, distinct categories, polar opposites, or dichotomies. Instead, they represent different ends on a continuum (Creswell, 2015; Newman & Benz, 1998). A study *tends* to be more qualitative than quantitative or vice versa. **Mixed methods research** resides in the middle of this continuum because it incorporates elements of both qualitative and quantitative approaches.

Often the distinction between **qualitative research** and **quantitative research** is framed in terms of using words (qualitative) rather than numbers (quantitative), or better yet, using closed-ended questions and responses (quantitative hypotheses) or open-ended questions and responses (qualitative interview questions). A more complete way to view the gradations of differences between them is in the basic philosophical assumptions researchers bring to the study, the types of research strategies used in the research (e.g., quantitative experiments or qualitative **case studies**), and the specific methods employed in conducting these strategies (e.g., collecting data quantitatively on instruments versus collecting qualitative data through observing a setting). Moreover, there is a historical evolution to both approaches—with

the quantitative approaches dominating the forms of research in the social sciences from the late 19th century up until the mid-20th century. During the latter half of the 20th century, interest in qualitative research increased and along with it, the development of mixed methods research. With this background, it should prove helpful to view definitions of these three key terms as used in this book:

- *Qualitative research* is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data. The final written report has a flexible structure. Those who engage in this form of inquiry support a way of looking at research that honors an inductive style, a focus on individual meaning, and the importance of reporting the complexity of a situation.

- *Quantitative research* is an approach for testing objective **theories** by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures. The final written report has a set structure consisting of introduction, literature and theory, methods, results, and discussion. Like qualitative researchers, those who engage in this form of inquiry have assumptions about testing theories deductively, building in protections against bias, controlling for alternative or counterfactual explanations, and being able to generalize and replicate the findings.

- *Mixed methods research* is an approach to inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks. The core assumption of this form of inquiry is that the integration of qualitative and quantitative data yields additional insight beyond the information provided by either the quantitative or qualitative data alone.

These definitions have considerable information in each one of them. Throughout this book, we will discuss the parts of the definitions so that their meanings will become clear to you as you read ahead.

Three Components Involved in an Approach

Two important components in each definition are that the approach to research involves philosophical assumptions as well as distinct methods or procedures. The broad research approach is the *plan or proposal to conduct research*, involves the intersection of philosophy, research designs, and specific methods. A framework that we use to explain the interaction of these three components is seen in Figure 1.1. To reiterate, in planning a study,

Figure 1.1 A Framework for Research—The Interconnection of Worldviews, Design, and Research Methods

researchers need to think through the philosophical **worldview** assumptions that they bring to the study, the research design that is related to this worldview, and the specific methods or procedures of research that translate the approach into practice.

Philosophical Worldviews

Although philosophical ideas remain largely hidden in research (Slife & Williams, 1995), they still influence the practice of research and need to be identified. We suggest that individuals preparing a research proposal or plan make explicit the larger philosophical ideas they espouse. This information will help explain why they chose qualitative, quantitative, or mixed methods approaches for their research. In writing about worldviews, a proposal might include a section that addresses the following:

- The philosophical worldview proposed in the study
- A definition of basic ideas of that worldview
- How the worldview shaped their approach to research

We have chosen to use the term *worldview* as meaning "a basic set of beliefs that guide action" (Guba, 1990, p. 17). Others have called them *paradigms* (Lincoln, Lynham, & Guba, 2011; Mertens, 2010); *epistemologies* and *ontologies* (Crotty, 1998), or *broadly conceived research methodologies* (Neuman, 2009). We see worldviews as a general philosophical orientation about the world and the nature of research that a researcher brings to a study. Individuals develop worldviews based on their discipline orientations and

research communities, advisors and mentors, and past research experiences. The types of beliefs held by individual researchers based on these factors will often lead to embracing a strong qualitative, quantitative, or mixed methods approach in their research. Although there is ongoing debate about what worldviews or beliefs researchers bring to inquiry, we will highlight four that are widely discussed in the literature: postpositivism, constructivism, transformative, and **pragmatism.** The major elements of each position are presented in Table 1.1.

The Postpositivist Worldview

The postpositivist assumptions have represented the traditional form of research, and these assumptions hold true more for quantitative research than qualitative research. This worldview is sometimes called the *scientific method,* or doing *science research*. It is also called *positivist/postpositivist research, empirical science*, and *postpositivism*. This last term is called postpositivism because it represents the thinking after positivism, challenging the traditional notion of the absolute truth of knowledge (Phillips & Burbules, 2000) and recognizing that we cannot be absolutely positive about our claims of knowledge when studying the behavior and actions of humans. The postpositivist tradition comes from 19th-century writers, such as Comte, Mill, Durkheim, Newton, and Locke (Smith, 1983) and more recently from writers such as Phillips and Burbules (2000).

Postpositivists hold a deterministic philosophy in which causes (probably) determine effects or outcomes. Thus, the problems studied by postpositivists reflect the need to identify and assess the causes that influence outcomes, such as those found in experiments. It is also reductionistic in that the intent is to reduce the ideas into a small, discrete set to test, such as the variables that comprise hypotheses and research questions.

Table 1.1 Four Worldviews

Postpositivism	Constructivism
• Determination • Reductionism • Empirical observation and measurement • Theory verification	• Understanding • Multiple participant meanings • Social and historical construction • Theory generation
Transformative	**Pragmatism**
• Political • Power and justice oriented • Collaborative • Change-oriented	• Consequences of actions • Problem-centered • Pluralistic • Real-world practice oriented

The knowledge that develops through a postpositivist lens is based on careful observation and measurement of the objective reality that exists "out there" in the world. Thus, developing numeric measures of observations and studying the behavior of individuals becomes paramount for a postpositivist. Finally, there are laws or theories that govern the world, and these need to be tested or verified and refined so that we can understand the world. Thus, in the scientific method—the accepted approach to research by postpositivists—a researcher begins with a theory, collects data that either supports or refutes the theory, and then makes necessary revisions and conducts additional tests.

In reading Phillips and Burbules (2000), you can gain a sense of the key assumptions of this position, such as the following:

1. Knowledge is conjectural (and antifoundational)—absolute truth can never be found. Thus, evidence established in research is always imperfect and fallible. It is for this reason that researchers state that they do not prove a hypothesis; instead, they indicate a failure to reject the hypothesis.
2. Research is the process of making claims and then refining or abandoning some of them for other claims more strongly warranted. Most quantitative research, for example, starts with the test of a theory.
3. Data, evidence, and rational considerations shape knowledge. In practice, the researcher collects information on instruments based on measures completed by the participants or by observations recorded by the researcher.
4. Research seeks to develop relevant, true statements, ones that can serve to explain the situation of concern or that describe the causal relationships of interest. In quantitative studies, researchers advance the relationship among variables and pose this in terms of questions or hypotheses.
5. Being objective is an essential aspect of competent inquiry; researchers must examine methods and conclusions for bias. For example, standard of validity and reliability are important in quantitative research.

The Constructivist Worldview

Others hold a different worldview. Constructivism or social constructivism (often combined with interpretivism) is such a perspective, and it is typically seen as an approach to qualitative research. The ideas came from Mannheim and from works such as Berger and Luckmann's (1967) *The Social Construction of Reality* and Lincoln and Guba's (1985) *Naturalistic Inquiry*. More recent writers who have summarized this position are Lincoln and

colleagues (2011), Mertens (2010), and Crotty (1998), among others. **Social constructivists** believe that individuals seek understanding of the world in which they live and work. Individuals develop subjective meanings of their experiences—meanings directed toward certain objects or things. These meanings are varied and multiple, leading the researcher to look for the complexity of views rather than narrowing meanings into a few categories or ideas. The goal of the research is to rely as much as possible on the participants' views of the situation being studied. The questions become broad and general so that the participants can construct the meaning of a situation, typically forged in discussions or interactions with other persons. The more open-ended the questioning, the better, as the researcher listens carefully to what people say or do in their life settings. Often these subjective meanings are negotiated socially and historically. They are not simply imprinted on individuals but are formed through interaction with others (hence social constructivism) and through historical and cultural norms that operate in individuals' lives. Thus, constructivist researchers often address the processes of interaction among individuals. They also focus on the specific contexts in which people live and work in order to understand the historical and cultural settings of the participants. Researchers recognize that their own backgrounds shape their interpretation, and they position themselves in the research to acknowledge how their interpretation flows from their personal, cultural, and historical experiences. The researcher's intent is to make sense of (or interpret) the meanings others have about the world. Rather than starting with a theory (as in postpositivism), inquirers generate or inductively develop a theory or pattern of meaning.

For example, in discussing constructivism, Crotty (1998) identified several assumptions:

1. Human beings construct meanings as they engage with the world they are interpreting. Qualitative researchers tend to use open-ended questions so that the participants can share their views.
2. Humans engage with their world and make sense of it based on their historical and social perspectives—we are all born into a world of meaning bestowed upon us by our culture. Thus, qualitative researchers seek to understand the context or setting of the participants through visiting this context and gathering information personally. They also interpret what they find, an interpretation shaped by the researcher's own experiences and background.
3. The basic generation of meaning is always social, arising in and out of interaction with a human community. The process of qualitative research is largely inductive; the inquirer generates meaning from the data collected in the field.

The Transformative Worldview

Another group of researchers holds to the philosophical assumptions of the transformative approach. This position arose during the 1980s and 1990s from individuals who felt that the postpositivist assumptions imposed structural laws and theories that did not fit marginalized individuals in our society or issues of power and social justice, discrimination, and oppression that needed to be addressed. There is no uniform body of literature characterizing this worldview, but it includes groups of researchers that are critical theorists; participatory action researchers; Marxists; feminists; racial and ethnic minorities; persons with disabilities; indigenous and postcolonial peoples; and members of the lesbian, gay, bisexual, transsexual, and queer communities. Historically, the transformative writers have drawn on the works of Marx, Adorno, Marcuse, Habermas, and Freire (Neuman, 2009). Fay (1987), Heron and Reason (1997), Kemmis and Wilkinson (1998), Kemmis and McTaggart (2000), and Mertens (2009, 2010) are additional writers to read for this perspective.

In the main, these inquirers felt that the constructivist stance did not go far enough in advocating for an action agenda to help marginalized peoples. A **transformative worldview** holds that research inquiry needs to be intertwined with politics and a political change agenda to confront social oppression at whatever levels it occurs (Mertens, 2010). Thus, the research contains an action agenda for reform that may change lives of the participants, the institutions in which individuals work or live, and the researcher's life. Moreover, specific issues need to be addressed that speak to important social issues of the day, issues such as empowerment, inequality, oppression, domination, suppression, and alienation. The researcher often begins with one of these issues as the focal point of the study. This research also assumes that the inquirer will proceed collaboratively so as to not further marginalize the participants as a result of the inquiry. In this sense, the participants may help design questions, collect data, analyze information, or reap the rewards of the research. Transformative research provides a voice for these participants, raising their consciousness or advancing an agenda for change to improve their lives. It becomes a united voice for reform and change.

This philosophical worldview focuses on the needs of groups and individuals in our society that may be marginalized or disenfranchised. Therefore, theoretical perspectives may be integrated with the philosophical assumptions that construct a picture of the issues being examined, the people to be studied, and the changes that are needed, such as feminist perspectives, racialized discourses, critical theory, queer theory, and disability theory—theoretical lens to be discussed more in Chapter 3.

Although these are diverse groups and our explanations here are generalizations, it is helpful to view the summary by Mertens (2010) of key features of the transformative worldview or paradigm:

- It places central importance on the study of lives and experiences of diverse groups that have traditionally been marginalized. Of special interest for these diverse groups is how their lives have been constrained by oppressors and the strategies that they use to resist, challenge, and subvert these constraints.
- In studying these diverse groups, the research focuses on inequities based on gender, race, ethnicity, disability, sexual orientation, and socioeconomic class that result in asymmetric power relationships.
- The research in the transformative worldview links political and social action to these inequities.
- Transformative research uses a program theory of beliefs about how a program works and why the problems of oppression, domination, and power relationships exist.

The Pragmatic Worldview

Another position about worldviews comes from the pragmatists. Pragmatism derives from the work of Peirce, James, Mead, and Dewey (Cherryholmes, 1992). Other writers include Murphy (1990), Patton (1990), and Rorty (1990). There are many forms of this philosophy, but for many, pragmatism as a worldview arises out of actions, situations, and consequences rather than antecedent conditions (as in postpositivism). There is a concern with applications—what works—and solutions to problems (Patton, 1990). Instead of focusing on methods, researchers emphasize the research problem and question and use all approaches available to understand the problem (see Rossman & Wilson, 1985). As a philosophical underpinning for mixed methods studies, Morgan (2007), Patton (1990), and Tashakkori and Teddlie (2010) convey its importance for focusing attention on the research problem in social science research and then using pluralistic approaches to derive knowledge about the problem. Using Cherryholmes (1992), Morgan (2007), and our own views, pragmatism provides a philosophical basis for research:

- Pragmatism is not committed to any one system of philosophy and reality. This applies to mixed methods research in that inquirers draw liberally from both quantitative and qualitative assumptions when they engage in their research.
- Individual researchers have a freedom of choice. In this way, researchers are free to choose the methods, techniques, and procedures of research that best meet their needs and purposes.
- Pragmatists do not see the world as an absolute unity. In a similar way, mixed methods researchers look to many approaches for collecting and analyzing data rather than subscribing to only one way (e.g., quantitative or qualitative).

- Truth is what works at the time. It is not based in a duality between reality independent of the mind or within the mind. Thus, in mixed methods research, investigators use both quantitative and qualitative data because they work to provide the best understanding of a research problem.
- The pragmatist researchers look to the *what* and *how* to research based on the intended consequences—where they want to go with it. Mixed methods researchers need to establish a purpose for their mixing, a rationale for the reasons why quantitative and qualitative data need to be mixed in the first place.
- Pragmatists agree that research always occurs in social, historical, political, and other contexts. In this way, mixed methods studies may include a postmodern turn, a theoretical lens that is reflective of social justice and political aims.
- Pragmatists have believed in an external world independent of the mind as well as that lodged in the mind. But they believe that we need to stop asking questions about reality and the laws of nature (Cherryholmes, 1992). "They would simply like to change the subject" (Rorty, 1990, p. xiv).
- Thus, for the mixed methods researcher, pragmatism opens the door to multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis.

Research Designs

The researcher not only selects a qualitative, quantitative, or mixed methods study to conduct; the inquirer also decides on a type of study within these three choices. Research designs are types of inquiry within qualitative, quantitative, and mixed methods approaches that provide specific direction for procedures in a research study. Others have called them *strategies of inquiry* (Denzin & Lincoln, 2011). The designs available to the researcher have grown over the years as computer technology has advanced our data analysis and ability to analyze complex models, and as individuals have articulated new procedures for conducting social science research. Select types will be emphasized in the methods of Chapters 8, 9, and 10—designs that are frequently used in the social sciences. Here we introduce those that are discussed later and that are cited in examples throughout the book. An overview of these designs is shown in Table 1.2.

Quantitative Designs

During the late 19th and throughout the 20th century, strategies of inquiry associated with quantitative research were those that invoked the postpositivist worldview and that originated mainly in psychology. These include *true*

Table 1.2 Alternative Research Designs

Quantitative	Qualitative	Mixed Methods
• Experimental designs • Nonexperimental designs, such as surveys • Longitudinal designs	• Narrative research • Phenomenology • Grounded theory • Ethnographies • Case study	• Convergent • Explanatory sequential • Exploratory sequential • Complex designs with embedded core designs

experiments and the less rigorous experiments called *quasi-experiments* (see, an original, early treatise on this, Campbell & Stanley, 1963). An additional experimental design is *applied behavioral analysis or single-subject experiments* in which an experimental treatment is administered over time to a single individual or a small number of individuals (Cooper, Heron, & Heward, 2007; Neuman & McCormick, 1995). One type of nonexperimental quantitative research is *causal-comparative research* in which the investigator compares two or more groups in terms of a cause (or independent variable) that has already happened. Another nonexperimental form of research is the *correlational design* in which investigators use the correlational statistic to describe and measure the degree or association (or relationship) between two or more variables or sets of scores (Creswell, 2012). These designs have been elaborated into more complex relationships among variables found in techniques of structural equation modeling, hierarchical linear modeling, and logistic regression. More recently, quantitative strategies have involved complex experiments with many variables and treatments (e.g., factorial designs and repeated measure designs). Designs often employ longitudinal data collection over time to examine the development of ideas and trends. Designs have also included elaborate structural equation models that incorporate causal paths and the identification of the collective strength of multiple variables. Rather than discuss all of these quantitative approaches, we will focus on two designs: surveys and experiments.

- **Survey research** provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population. It includes cross-sectional and longitudinal studies using questionnaires or structured interviews for data collection—with the intent of generalizing from a sample to a population (Fowler, 2008).

- **Experimental research** seeks to determine if a specific treatment influences an outcome. The researcher assesses this by providing a specific treatment to one group and withholding it from another and then determining how both groups scored on an outcome. Experiments include true experiments, with the random assignment of subjects to treatment conditions, and quasi-experiments that use nonrandomized assignments (Keppel, 1991). Included within quasi-experiments are single-subject designs.

Qualitative Designs

In qualitative research, the numbers and types of approaches have also become more clearly visible during the 1990s and into the 21st century. The historic origin for qualitative research comes from anthropology, sociology, the humanities, and evaluation. Books have summarized the various types, and complete procedures are now available on specific qualitative inquiry approaches (Creswell & Poth, 2018). For example, Clandinin and Connelly (2000) constructed a picture of what narrative researchers do. Moustakas (1994) discussed the philosophical tenets and the procedures of the phenomenological method; Charmaz (2006), Corbin and Strauss (2007; 2015), and Strauss and Corbin (1990, 1998) identified the procedures of **grounded theory.** Fetterman (2010) and Wolcott (2008) summarized ethnographic procedures and the many faces and research strategies of **ethnography,** and Stake (1995) and Yin (2009, 2012, 2014) suggested processes involved in case study research. In this book, illustrations are drawn from the following strategies, recognizing that approaches such as participatory action research (Kemmis & McTaggart, 2000), discourse analysis (Cheek, 2004), and others not mentioned are also viable ways to conduct qualitative studies:

- **Narrative research** is a design of inquiry from the humanities in which the researcher studies the lives of individuals and asks one or more individuals to provide stories about their lives (Riessman, 2008). This information is then often retold or restoried by the researcher into a narrative chronology. Often, in the end, the narrative combines views from the participant's life with those of the researcher's life in a collaborative narrative (Clandinin & Connelly, 2000).

- **Phenomenological research** is a design of inquiry coming from philosophy and psychology in which the researcher describes the lived experiences of individuals about a phenomenon as described by participants. This description culminates in the essence of the experiences for several individuals who have all experienced the phenomenon. This design has strong philosophical underpinnings and typically involves conducting interviews (Giorgi, 2009; Moustakas, 1994).

- Grounded theory is a design of inquiry from sociology in which the researcher derives a general, abstract theory of a process, action, or interaction grounded in the views of participants. This process involves using multiple stages of data collection and the refinement and interrelationship of categories of information (Charmaz, 2006; Corbin & Strauss, 2007, 2015).

- Ethnography is a design of inquiry coming from anthropology and sociology in which the researcher studies the shared patterns of behaviors, language, and actions of an intact cultural group in a natural setting over a prolonged period of time. Data collection often involves observations and interviews.

- Case studies are a design of inquiry found in many fields, especially evaluation, in which the researcher develops an in-depth analysis of a case, often a program, event, activity, process, or one or more individuals. Cases are bounded by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time (Stake, 1995; Yin, 2009, 2012, 2014).

Mixed Methods Designs

Mixed methods involves combining or integration of qualitative and quantitative research and data in a research study. Qualitative data tends to be open-ended without predetermined responses while quantitative data usually includes closed-ended responses such as found on questionnaires or psychological instruments. The field of mixed methods research, as we know it today, began in the middle to late 1980s. Its origins, however, go back further. In 1959, Campbell and Fisk used multiple methods to study psychological traits—although their methods were only quantitative measures. Their work prompted others to begin collecting multiple forms of data, such as observations and interviews (qualitative data) with traditional surveys (Sieber, 1973). Early thoughts about the value of multiple methods—called mixed methods—resided in the idea that all methods had bias and weaknesses, and the collection of both quantitative and qualitative data neutralized the weaknesses of each form of data. Triangulating data sources—a means for seeking convergence across qualitative and quantitative methods—was born (Jick, 1979). By the early 1990s, mixed methods turned toward the systematic *integration* of quantitative and qualitative data, and the idea of ways to combine the data through different types of research designs emerged. These types of designs were extensively discussed in a major handbook addressing the field in 2003 and reissued in 2010 (Tashakkori & Teddlie, 2010). Procedures for expanding mixed methods developed such as follows:

- Ways to integrate the quantitative and qualitative data, such as one database, could be used to check the accuracy (validity) of the other database.
- One database could help explain the other database, and one database could explore different types of questions than the other database.
- One database could lead to better instruments when instruments are not well-suited for a sample or population.
- One database could build on other databases, and one database could alternate with another database back and forth during a longitudinal study.

Further, the designs were developed and notation was added to help the reader understand the designs; challenges to working with the designs

emerged (Creswell & Plano Clark, 2011, 2018). Practical issues are being widely discussed today in terms of examples of "good" mixed methods studies and evaluative criteria, the use of a team to conduct this model of inquiry, and the expansion of mixed methods to other countries and disciplines. Although many designs exist in the mixed methods field, this book will focus on the three primary designs found in the social and health sciences today:

- **Convergent mixed methods** is a form of mixed methods design in which the researcher converges or merges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem. In this design, the investigator typically collects both forms of data at roughly the same time and then integrates the information in the interpretation of the overall results. Contradictions or incongruent findings are explained or further probed in this design.

- **Explanatory sequential mixed methods** is one in which the researcher first conducts quantitative research, analyzes the results and then builds on the results to explain them in more detail with qualitative research. It is considered explanatory because the initial quantitative data results are explained further with the qualitative data. It is considered sequential because the initial quantitative phase is followed by the qualitative phase. This type of design is popular in fields with a strong quantitative orientation (hence the project begins with quantitative research), but it presents challenges of identifying the quantitative results to further explore and the unequal sample sizes for each phase of the study.

- **Exploratory sequential mixed methods** is the reverse sequence from the explanatory sequential design. In the exploratory sequential approach the researcher first begins with a qualitative research phase and explores the views of participants. The data are then analyzed, and the information used to build into a second, quantitative phase. The qualitative phase may be used to build an instrument that best fits the sample under study, to identify appropriate instruments to use in the follow-up quantitative phase, to develop an intervention for an experiment, to design an app or website, or to specify variables that need to go into a follow-up quantitative study. Particular challenges to this design reside in focusing in on the appropriate qualitative findings to use and the sample selection for both phases of research.

- These basic or core designs then can be used in more complex mixed methods strategies. The core designs can augment an experiment by, for example, collecting qualitative data after the experiment to help explain the quantitative outcome results. The core designs can be used within a case study framework to deductively document cases or to generate cases for further analysis. These basic designs can inform a theoretical study drawn from social justice or power (see Chapter 3) as an overarching perspective within a design that contains both quantitative and qualitative data. The core designs can also be used in the different phases of an evaluation procedure that spans from a needs assessment to a test of a program or experimental intervention.

Research Methods

The third major element in the framework is the specific research methods that involve the forms of data collection, analysis, and interpretation that researchers propose for their studies. As shown in Table 1.3, it is useful to consider the full range of possibilities of data collection and to organize these methods, for example, by their degree of predetermined nature, their use of closed-ended versus open-ended questioning, and their focus on numeric versus nonnumeric data analysis. These methods will be developed further in Chapters 8 through 10.

Researchers collect data on an instrument or test (e.g., a set of questions about attitudes toward self-esteem) or gather information on a behavioral checklist (e.g., observation of a worker engaged in a complex skill). On the other end of the continuum, collecting data might involve visiting a research site and observing the behavior of individuals without predetermined questions or conducting an interview in which the individual is allowed to talk openly about a topic, largely without the use of specific questions. The choice of methods turns on whether the intent is to specify the type of information to be collected in advance of the study or to allow it to emerge from participants in the project. Also, the type of data analyzed may be numeric information gathered on scales of instruments or text information recording and reporting the voice of the participants. Researchers make interpretations of the statistical results, or they interpret the themes or patterns that emerge from the data. In some forms of research, both quantitative and qualitative data are collected, analyzed, and interpreted. Instrument data may be augmented with open-ended observations, or census data may be followed by in-depth exploratory interviews. In this case of mixing methods, the researcher makes inferences across both the quantitative and qualitative databases.

Table 1.3 Quantitative, Mixed, and Qualitative Methods

Quantitative Methods	Mixed Methods	Qualitative Methods
Pre-determined	Both predetermined and emerging methods	Emerging methods
Instrument based questions	Both open- and closed-ended questions	Open-ended questions
Performance data, attitude data, observational data, and census data	Multiple forms of data drawing on all possibilities	Interview data, observation data, document data, and audiovisual data
Statistical analysis	Statistical and text analysis	Text and image analysis
Statistical interpretation	Across databases interpretation	Themes, patterns interpretation

Research Approaches as Worldviews, Designs, and Methods

The worldviews, the designs, and the methods all contribute to a research approach that *tends* to be quantitative, qualitative, or mixed. Table 1.4 creates distinctions that may be useful in choosing an approach. This table also includes practices of all three approaches that are emphasized in remaining chapters of this book.

Typical scenarios of research can illustrate how these three elements combine into a research design.

- *Quantitative approach:* Postpositivist worldview, experimental design, and pretest and posttest measures of attitudes

  In this scenario, the researcher tests a theory by specifying narrow hypotheses and the collection of data to support or refute the hypotheses. An experimental design is used in which attitudes are assessed both before and after an experimental treatment. The data are collected on an instrument that measures attitudes, and the information is analyzed using statistical procedures and hypothesis testing.

- *Qualitative approach:* Constructivist worldview, ethnographic design, and observation of behavior

  In this situation, the researcher seeks to establish the meaning of a phenomenon from the views of participants. This means identifying a culture-sharing group and studying how it develops shared patterns of behavior over time (i.e., ethnography). One of the key elements of collecting data in this way is to observe participants' behaviors during their engagement in activities.

- *Qualitative approach:* Transformative worldview, narrative design, and open-ended interviewing

  For this study, the inquirer seeks to examine an issue related to oppression of individuals. To study this, stories are collected of individual oppression using a narrative approach. Individuals are interviewed at some length to determine how they have personally experienced oppression.

- *Mixed methods approach:* Pragmatic worldview, collection of both quantitative and qualitative data sequentially in the design

  The researcher bases the inquiry on the assumption that collecting diverse types of data best provides a more complete understanding of a research problem than either quantitative or qualitative data alone. The study begins with a broad survey in order to generalize results to a population and then, in a second phase, focuses on qualitative, open-ended interviews to collect detailed views from participants to help explain the initial quantitative survey.

Table 1.4 Qualitative, Quantitative, and Mixed Methods Approaches

Tend to or Typically . . .	Qualitative Approaches	Quantitative Approaches	Mixed Methods Approaches
• Use these philosophical assumptions • Employ these strategies of inquiry	• Constructivist/transformative knowledge claims • Phenomenology, grounded theory, ethnography, case study, and narrative	• Postpositivist knowledge claims • Surveys and experiments	• Pragmatic knowledge claims • Sequential, convergent, and transformative
• Employ these methods	• Open-ended questions, emerging approaches, text or image data	• Closed-ended questions, predetermined approaches, numeric data (may include some open-ended questions)	• Both open- and closed-ended questions, both emerging and predetermined approaches, and both quantitative and qualitative data and analysis
• Use these practices of research as the researcher	• Positions him- or herself • Collects participant meanings • Focuses on a single concept or phenomenon • Brings personal values into the study • Studies the context or setting of participants • Validates the accuracy of findings • Makes interpretations of the data • Creates an agenda for change or reform • Collaborates with the participants • Employs text analysis procedures	• Tests or verifies theories or explanations • Identifies variables to study • Relates variables in questions or hypotheses • Uses standards of validity and reliability • Observes and measures information numerically • Uses unbiased approaches • Employs statistical procedures	• Collects both quantitative and qualitative data • Develops a rationale for mixing • Integrates the data at different stages of inquiry • Presents visual pictures of the procedures in the study • Employs the practices of both qualitative and quantitative research

Criteria for Selecting a Research Approach

Given the possibility of qualitative, quantitative, or mixed methods approaches, what factors affect a choice of one approach over another for the design of a proposal? Added to worldview, design, and methods would be the research problem, the personal experiences of the researcher, and the audience(s) for whom the report will be written.

The Research Problem and Questions

A research problem, more thoroughly discussed in Chapter 5, is an issue or concern that needs to be addressed (e.g., the issue of racial discrimination). The problem comes from a void in the literature, and conflict in research results in the literature, topics that have been neglected in the literature; a need to lift up the voice of marginalized participants; and "real-life" problems found in the workplace, the home, the community, and so forth.

Certain types of social research problems call for specific approaches. For example, if the problem calls for (a) the identification of factors that influence an outcome, (b) the utility of an intervention, or (c) understanding the best predictors of outcomes, then a quantitative approach is best. It is also the best approach to use to test a theory or explanation. On the other hand, if a concept or phenomenon needs to be explored and understood because little research has been done on it or because it involves an understudied sample, then it merits a qualitative approach. Qualitative research is especially useful when the researcher does not know the important variables to examine. This type of approach may be needed because the topic is new, the subject has never been addressed with a certain sample or group of people, and existing theories do not apply with the particular sample or group under study (Morse, 1991). A mixed methods design is useful when the quantitative or qualitative approach, each by itself, is inadequate to best understand a research problem and the strengths of both quantitative and qualitative research (and its data) can provide the best understanding. For example, a researcher may want to both generalize the findings to a population as well as develop a detailed view of the meaning of a phenomenon or concept for individuals. In this research, the inquirer first explores generally to learn what variables to study and then studies those variables with a large sample of individuals. Alternatively, researchers may first survey a large number of individuals and then follow up with a few participants to obtain their specific views and their voices about the topic. In these situations, collecting both closed-ended quantitative data and open-ended qualitative data proves advantageous.

Personal Experiences

Researchers' own personal training and experiences also influence their choice of approach. An individual trained in technical, scientific writing, statistics, and computer statistical programs and familiar with quantitative journals in the library would most likely choose the quantitative design. On the other hand, individuals who enjoy writing in a literary way or conducting personal interviews or making up-close observations may gravitate to the qualitative approach. The mixed methods researcher is an individual familiar with both quantitative and qualitative research. This person also has the time and resources to collect and analyze both quantitative and qualitative data.

Since quantitative studies are the traditional mode of research, carefully worked out procedures and rules exist for them. Researchers may be more comfortable with the highly systematic procedures of quantitative research. Also, for some individuals, it can be uncomfortable to challenge accepted approaches among some faculty by using qualitative and transformative approaches to inquiry. On the other hand, qualitative approaches allow room to be innovative and to work more within researcher-designed frameworks. They allow more creative, literary-style writing, a form that individuals may like to use. For those researchers undertaking social justice or community involvement, a qualitative approach is typically best, although this form of research may also incorporate mixed methods designs.

For the mixed methods researcher, the project will take extra time because of the need to collect and analyze both quantitative and qualitative data. It fits a person who enjoys and has the skills in both quantitative and qualitative research.

Audience

Finally, researchers write for audiences that will accept their research. These audiences may be journal editors and readers, faculty committees, conference attendees, or colleagues in the field. Students should consider the approaches typically supported and used by their advisers. The experiences of these audiences with quantitative, qualitative, or mixed methods studies can shape the decision made about the choice of design.

SUMMARY

In planning a research project, researchers need to identify whether they will employ a qualitative, quantitative, or mixed methods approach. This approach is based on bringing together a worldview or assumptions about research, a specific design, and research methods. Decisions about choice of an approach are further influenced by the research problem or issue being studied, the personal experiences of the researcher, and the audience for whom the researcher writes.

Writing Exercises

1. Identify a research question in a journal article and discuss what approach would be best to study the question and why.
2. Take a topic that you would like to study, and using the four combinations of worldviews, designs, and research methods in Figure 1.1, discuss a project that brings together a worldview, designs, and methods. Identify whether this would be quantitative, qualitative, or mixed methods research. Use the typical scenarios that we have advanced in this chapter as a guide.
3. What distinguishes a quantitative study from a qualitative study? Mention three characteristics.

Additional Readings

Cherryholmes, C. H. (1992, August–September). Notes on pragmatism and scientific realism. *Educational Researcher, 14,* 13–17.

Cleo Cherryholmes discusses pragmatism as a contrasting perspective from scientific realism. The strength of this article lies in the numerous citations of writers about pragmatism and a clarification of one version of pragmatism. Cherryholmes's version points out that pragmatism is driven by anticipated consequences, reluctance to tell a true story, and the idea that there is an external world independent of our minds. Also included in this article are numerous references to historical and recent writers about pragmatism as a philosophical position.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process.* Thousand Oaks, CA: Sage.

Michael Crotty offers a useful framework for tying together the many epistemological issues, theoretical perspectives, methodology, and methods of social research. He interrelates the four components of the research process and shows in a table a representative sampling of topics of each component. He then goes on to discuss nine different theoretical orientations in social research, such as postmodernism, feminism, critical inquiry, interpretivism, constructionism, and positivism.

Kemmis, S., & Wilkinson, M. (1998). Participatory action research and the study of practice. In B. Atweh, S. Kemmis, & P. Weeks (Eds.), *Action research in practice: Partnerships for social justice in education* (pp. 21–36). New York: Routledge.

Stephen Kemmis and Mervyn Wilkinson provide an excellent overview of participatory research. In particular, they note the six major features of this inquiry approach and then discuss how action research is practiced at the individual, the social, or at both levels.

Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2011). Paradigmatic controversies, contradictions, and emerging confluences revisited. In N. K. Denzin & Y. S. Lincoln, *The SAGE handbook of qualitative research* (4th ed., pp. 97–128). Thousand Oaks, CA: Sage.

Yvonna Lincoln, Susan Lynham, and Egon Guba have provided the basic beliefs of five alternative inquiry paradigms in social science research: (a) positivism, (b) postpositivism, (c) critical theory, (d) constructivism, and (e) participatory. These extend the earlier analysis provided in the first and second editions of the handbook. Each is presented in terms of ontology (i.e., nature of reality), epistemology (i.e., how we know what we know), and methodology (i.e., the process of research). The participatory paradigm adds another alternative paradigm to those originally advanced in the first edition. After briefly presenting these five approaches, they contrast them in terms of seven issues, such as the nature

of knowledge, how knowledge accumulates, and goodness or quality criteria.

Mertens, D. (2009). *Transformative research and evaluation.* New York: Guilford.

Donna Mertens has devoted an entire text to advancing the transformative paradigm and the process of transformative research. She discusses the basic features of the transformative paradigm as an umbrella term, provides examples of groups affiliated with this paradigm, and links the paradigm to quantitative, qualitative, and mixed methods approaches. In this book she also discusses the research procedures of sampling, consent, reciprocity, data collection methods and instruments, data analysis and interpretation, and reporting.

Phillips, D. C., & Burbules, N. C. (2000). *Postpositivism and educational research.* Lanham, MD: Rowman & Littlefield.

D. C. Phillips and Nicholas Burbules summarize the major ideas of postpostivist thinking. Through two chapters, "What is Postpositivism?" and "Philosophical Commitments of Postpositivist Researchers," the authors advance major ideas about postpositivism—especially those that differentiate it from positivism. These include knowing that human knowledge is conjectural rather than unchallengeable and that our warrants for knowledge can be withdrawn in light of further investigations.

CHAPTER

2 Review of the Literature

Besides selecting a quantitative, qualitative, or mixed methods approach, the proposal or study designer also needs to review the literature about a **topic**. This literature review helps to determine whether the topic is worth studying, and it provides insight into ways in which the researcher can limit the scope to a needed area of inquiry.

This chapter continues the discussion about preliminary considerations before launching into a proposal or project. It begins with a discussion about selecting a topic and writing this topic down so that the researcher can continually reflect on it. At this point, researchers also need to consider whether the topic *can* and *should* be researched. Then the discussion moves into the actual process of reviewing the literature; addressing the general purpose for using literature in a study; and then turning to principles helpful in designing literature into qualitative, quantitative, and mixed methods studies.

The Research Topic

Before considering what literature to use in a project, first identify a topic to study and reflect on whether it is practical and useful to undertake the study. The topic is the subject or subject matter of a proposed study, such as "faculty teaching," "organizational creativity," or "psychological stress." Describe the topic in a few words or in a short phrase. The topic becomes the central idea to learn about or to explore.

There are several ways that researchers gain some insight into their topics when they are initially planning their research (our assumption is that the topic is chosen by the researcher and not by an adviser or committee member). One way is to draft a brief working title to the study. We are surprised at how often researchers fail to draft a title early in the development of their projects. In our opinion, the working or draft title becomes a major road sign in research—a tangible idea that the researcher can keep refocusing on and changing as the project goes on (see Glesne, 2015; Glesne & Peshkin, 1992). It becomes an orienting device. We find that, in our research, this topic grounds us and provides a sign of what we are studying, as well as a sign useful for conveying to others the central notion of the study. When students first provide their research project ideas to us, we often ask them to supply a working title if they do not already have one written down on paper.

How would this working title be written? Try completing this sentence: "My study is about . . ." A response might be, "My study is about at-risk children in the junior high," or "My study is about helping college faculty

become better researchers." At this stage in the design, frame the answer to the question so that another scholar might easily grasp the meaning of the project. A common shortcoming of beginning researchers is that they frame their study in complex and erudite language. This perspective may result from reading published articles that have undergone numerous revisions before being set in print. Good, sound research projects begin with straightforward, uncomplicated thoughts that are easy to read and understand. Think about a journal article that you have read recently. If it was easy and quick to read, it was likely written in general language that many readers could easily identify with in a way that was straightforward and simple in overall design and conceptualization. As a project develops it will become more complicated.

Wilkinson (1991) provided useful advice for creating a title: Be brief and avoid wasting words. Eliminate unnecessary words, such as "An Approach to . . . ," "A Study of . . . ," and so forth. Use a single title or a double title. An example of a double title would be "An Ethnography: Understanding a Child's Perception of War." In addition to Wilkinson's thoughts, consider a title no longer than 12 words, eliminate most articles and prepositions, and make sure that it includes the focus or topic of the study.

Another strategy for topic development is to pose the topic as a brief question. What question needs to be answered in the proposed study? A researcher might ask, "What treatment is best for depression?" "What does it mean to be Arabic in U.S. society today?" "What brings people to tourist sites in the Midwest?" When drafting questions such as these, focus on the key topic in the question as the major signpost for the study. Consider how this question might be expanded later to be more descriptive of your study (see Chapters 6 and 7 on the purpose statement and research questions and hypotheses).

Actively elevating this topic to a research study calls for reflecting on whether the topic can and should be researched. A topic *can* be researched if a researcher has participants willing to serve in the study. It also can be researched if the investigator has resources such as collecting data over a sustained period of time and using available computer programs to help in the analysis of data.

The question of *should* is a more complex matter. Several factors might go into this decision. Perhaps the most important are whether the topic adds to the pool of research knowledge in the literature available on the topic, replicates past studies, lifts up the voices of underrepresented groups or individuals, helps address social justice, or transforms the ideas and beliefs of the researcher.

A first step in any project is to spend considerable time in the library examining the research on a topic (strategies for effectively using the library and library resources appear later in this chapter). This point cannot be overemphasized. Beginning researchers may advance a great study that is complete in every way, such as in the clarity of research questions, the comprehensiveness of data collection, and the sophistication of statistical analysis. But the researcher may garner little support from faculty committees or conference

planners because the study does not add anything new to the body of research. Ask, "How does this project contribute to the literature?" Consider how the study might address a topic that has yet to be examined, extend the discussion by incorporating new elements, or replicate (or repeat) a study in new situations or with new participants. Contributing to the literature may also mean how the study adds to an understanding of a theory or extends a theory (see Chapter 3), or how the study provides a new perspective or "angle" to the existing literature, for example, by

- Studying an unusual location (e.g., rural America)
- Examining an unusual group of participants (e.g., refugees)
- Taking a perspective that may not be expected and reverses the expectation (e.g., why marriages do work rather than do not work)
- Providing novel means of collecting data (e.g., collect sounds)
- Presenting results in unusual ways (e.g., graphs that depict geographical locations)
- Studying a timely topic (e.g., immigration issues) (Creswell, 2016)

The issue of *should* the topic be studied also relates to whether anyone outside of the researcher's own immediate institution or area would be interested in the topic. Given a choice between a topic that might be of limited regional interest or one of national interest, we would opt for the latter because it would have wide appeal to a much broader audience. Journal editors, committee members, conference planners, and funding agencies all appreciate research that reaches a broad audience. Finally, the *should* issue also relates to the researcher's personal goals. Consider the time it takes to complete a project, revise it, and disseminate the results. All researchers should consider how the study and its heavy commitment of time will pay off in enhancing career goals, whether these goals relate to doing more research, obtaining a future position, or advancing toward a degree.

Before proceeding with a proposal or a study, one needs to weigh these factors and ask others for their reaction to a topic under consideration. Seek reactions from colleagues, noted authorities in the field, academic advisers, and faculty committee members. We often have students bring to us a one-page sketch of their proposed project that includes the problem or issue leading to a need for the study, the central research question they plan on asking, the types of data they will collect, and the overall significance of their study.

The Literature Review

Once the researcher identifies a topic that can and should be studied, the search can begin for related literature on the topic. The literature review

accomplishes several purposes. It shares with the reader the results of other studies that are closely related to the one being undertaken. It relates a study to the larger, ongoing dialogue in the literature, filling in gaps and extending prior studies (Cooper, 2010; Marshall & Rossman, 2016). It provides a framework for establishing the importance of the study as well as a benchmark for comparing the results with other findings. All or some of these reasons may be the foundation for writing the scholarly literature into a study (see Boote & Beile, 2005, for a more extensive discussion of purposes for compiling a literature review in research). Studies need to add to the body of literature on a topic, and literature sections in proposals are generally shaped from the larger problem to the narrower issue that leads directly into the methods of a study.

The Use of the Literature

Beyond the question of why literature is used is the additional issue of how it is used in research and proposals. It can assume various forms. Our best advice is to seek the opinion of your adviser or faculty members as to how they would like to see the literature addressed. We generally recommend to our advisees that the literature review in a proposal or project be brief and provide a summary of the major studies on the research problem; it does not need to be fully developed and comprehensive at this point, since faculty may ask for major changes in the study at the proposal meeting. In this model, the literature review is shorter—say 20 to 30 pages in length—and tells the reader that the student is aware of the literature on the topic and the latest writings. Another approach is to develop a detailed outline of the topics and potential references that will later be developed into an entire chapter, usually the second, titled "Literature Review," which might run from 20 to 60 pages or so.

The literature review in a journal article is an abbreviated form of that found in a dissertation or master's thesis. It typically is contained in a section called "Related Literature" and follows the introduction to a study. This is the pattern for quantitative research articles in journals. For qualitative research articles, the literature review may be found in a separate section, included in the introduction, or threaded throughout the study. Regardless of the form, another consideration is how the literature might be reviewed, depending on whether a qualitative, quantitative, or mixed methods approach has been selected.

In general, the literature review can take several forms. Cooper (2010) discussed four types: literature reviews that (a) integrate what others have done and said, (b) criticize previous scholarly works, (c) build bridges between related topics, and (d) identify the central issues in a field. With the exception of criticizing previous scholarly works, most dissertations and theses serve to integrate the literature, organize it into a series of related topics (often from general topics to narrower ones), and summarize the literature by pointing out the central issues.

In *qualitative* research, inquirers use the literature in a manner consistent with the assumptions of learning from the participant, not prescribing the questions that need to be answered from the researcher's standpoint. One of the chief reasons for conducting a qualitative study is that the study is exploratory. This usually means that not much has been written about the topic or the population being studied, and the researcher seeks to listen to participants and build an understanding based on what is heard.

However, the use of the literature in qualitative research varies considerably. In theoretically oriented studies, such as ethnographies or critical ethnographies, the literature on a cultural concept or a critical theory is introduced early in the report or proposal as an orienting framework. In grounded theory, case studies, and phenomenological studies, literature is less often used to set the stage for the study.

With an approach grounded in learning from participants and variation by type, there are several models for incorporating the literature review into a qualitative study. We offer three placement locations, and it can be used in any or all of these locations. As shown in Table 2.1, the researcher might include the literature review in the introduction. In this placement, the literature provides a useful backdrop for the problem or issue that has led to the need for the study, such as who has been writing about it, who has studied it, and who has indicated the importance of studying the issue. This framing of the problem is, of course, contingent on available studies. One can find illustrations of this model in many qualitative studies employing different types of inquiry strategy.

Table 2.1 Using Literature in a Qualitative Study

Use of the Literature	Criteria	Examples of Suitable Strategy Types
The literature is used to frame the problem in the introduction to the study.	There must be some literature available.	Typically, literature is used in all qualitative studies, regardless of type.
The literature is presented in a separate section as a review of the literature.	This approach is often acceptable to an audience most familiar with the traditional postpositivist approach to literature reviews.	This approach is used with those studies employing a strong theory and literature background at the beginning of a study, such as ethnographies and critical theory studies.
The literature is presented in the study at the end; it becomes a basis for comparing and contrasting findings of the qualitative study.	This approach is most suitable for the inductive process of qualitative research; the literature does not guide and direct the study but becomes an aid once patterns or categories have been identified.	This approach is used in all types of qualitative designs, but it is most popular with grounded theory, where one contrasts and compares a theory with other theories found in the literature.

A second form is to review the literature in a separate section, a model typically used in quantitative research, often found in journals with a quantitative orientation. In theory-oriented qualitative studies, such as ethnography, critical theory, or with a transformative aim, the inquirer might locate the theory discussion and literature in a separate section, typically toward the beginning of the write-up. Third, the researcher may incorporate the related literature in the final section, where it is used to compare and contrast with the results (or themes or categories) to emerge from the study. This model is especially popular in grounded theory studies, and we recommend it because it uses the literature inductively.

Quantitative research, on the other hand, includes a substantial amount of literature at the beginning of a study to provide direction for the research questions or hypotheses. It is also used to introduce a problem or to describe in detail the existing literature in a section titled "Related Literature" or "Review of Literature," or some other similar phrase. Also, the literature review can introduce a theory—an explanation for expected relationships (see Chapter 3)—describe the theory that will be used, and suggest why it is a useful theory to examine. At the end of a study, the researcher then revisits the literature and makes a comparison between the results with the existing findings in the literature. In this model, the quantitative researcher uses the literature deductively as a framework for the research questions or hypotheses.

In a *mixed methods* study, the researcher uses either a qualitative or a quantitative approach to the literature, depending on the type of strategy being used. In a sequential approach, the literature is presented in each phase in a way consistent with the method being used. For example, if the study begins with a quantitative phase, then the investigator is likely to include a substantial literature review that helps to establish a rationale for the research questions or hypotheses. If the study begins with a qualitative phase, then the literature is substantially less, and the researcher may incorporate it more into the end of the study—an inductive approach. If the research advances a convergent study with an equal weight and emphasis on both qualitative and quantitative data, then the literature may take either qualitative or quantitative forms. The decision as to which form to use is based on the audience for the study and what they would be most receptive to as well as to the students' graduate committees and their orientation. To recap, the literature used in a mixed methods project will depend on the strategy and the relative weight given to the qualitative or quantitative research in the study.

Our suggestions for using the literature in planning a qualitative, quantitative, or mixed methods study are as follows:

- In a qualitative study, use the literature sparingly in the beginning in order to convey an inductive design unless the design type requires a substantial literature orientation at the outset.
- Consider the most appropriate place for the literature in a qualitative study, and base the decision on the audience for the