

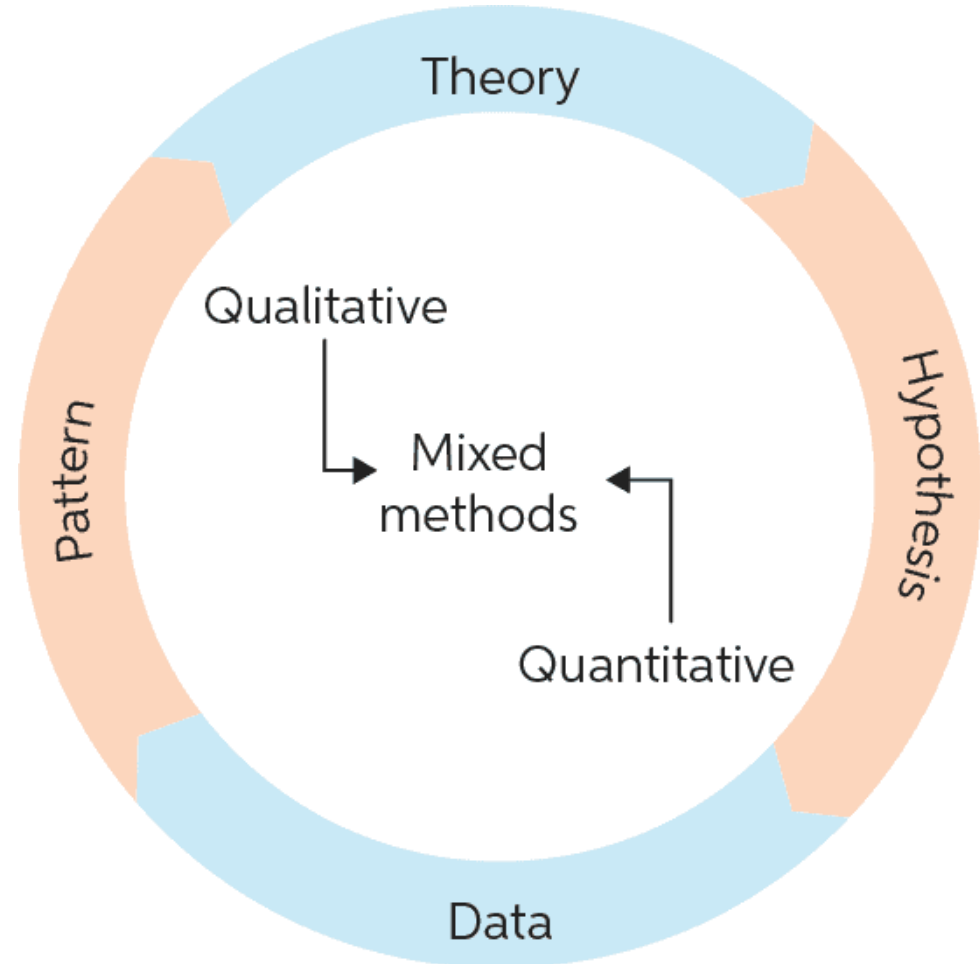
Research Design

John W. Creswell; J. David Creswell

Chapter 10

Mixed Method Procedures

- M Sajjad H. Bhuiyan
- Niagara University
- Research Seminar ADS 810
- Lori V. Quigley, Ph.D.
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Overview & Purpose of Chapter 10

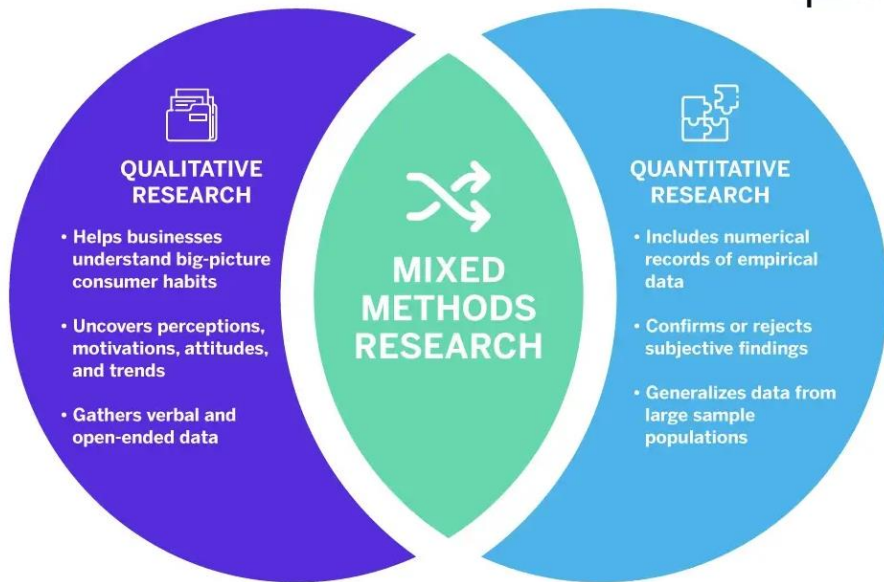


Figure 1. Mixed Method (source: Qualtrics XM)

Chapter 10 introduces mixed methods research

The chapter outlines what “procedures” look like when combining qualitative and quantitative methods.

Mixed method is qualitative and quantitative data collection, analysis, and integration

Chapter 10 emphasizes educating the reader on the nature, definition, historical context, and rationale for adopting mixed methods.

The chapter provides guidance on designing, implementing, analyzing, validating, and reporting mixed-method studies.

When the research is complex, such as PhD dissertation mixed method approach may be necessary

Mixed methods research involves collecting and analyzing both quantitative and qualitative data in a single study, integrating the two forms of data, and using a distinct mixed-methods design that specifies the timing, priority, and mixing of the methods. This method minimizes the limitations of both qualitative and quantitative methods.

Essential components of mixed-methods research

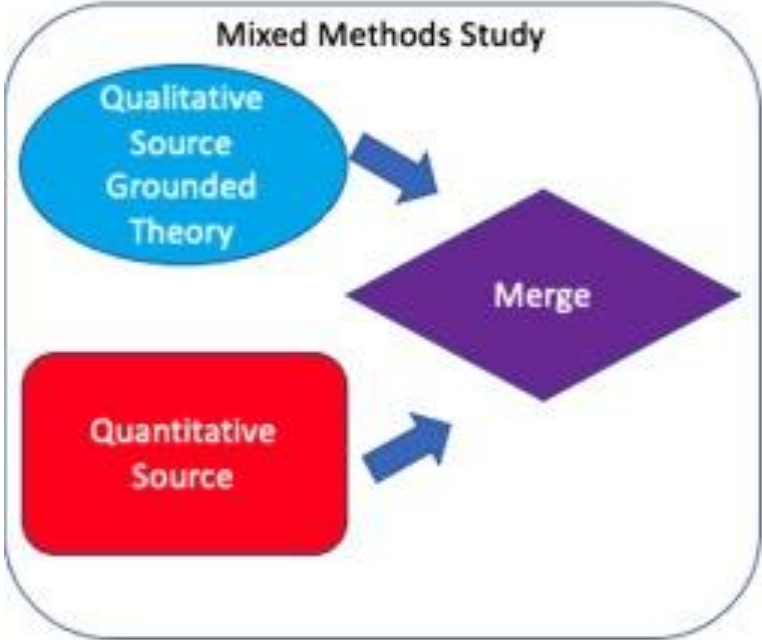


Figure 3: Merge (Source: Science Direct)

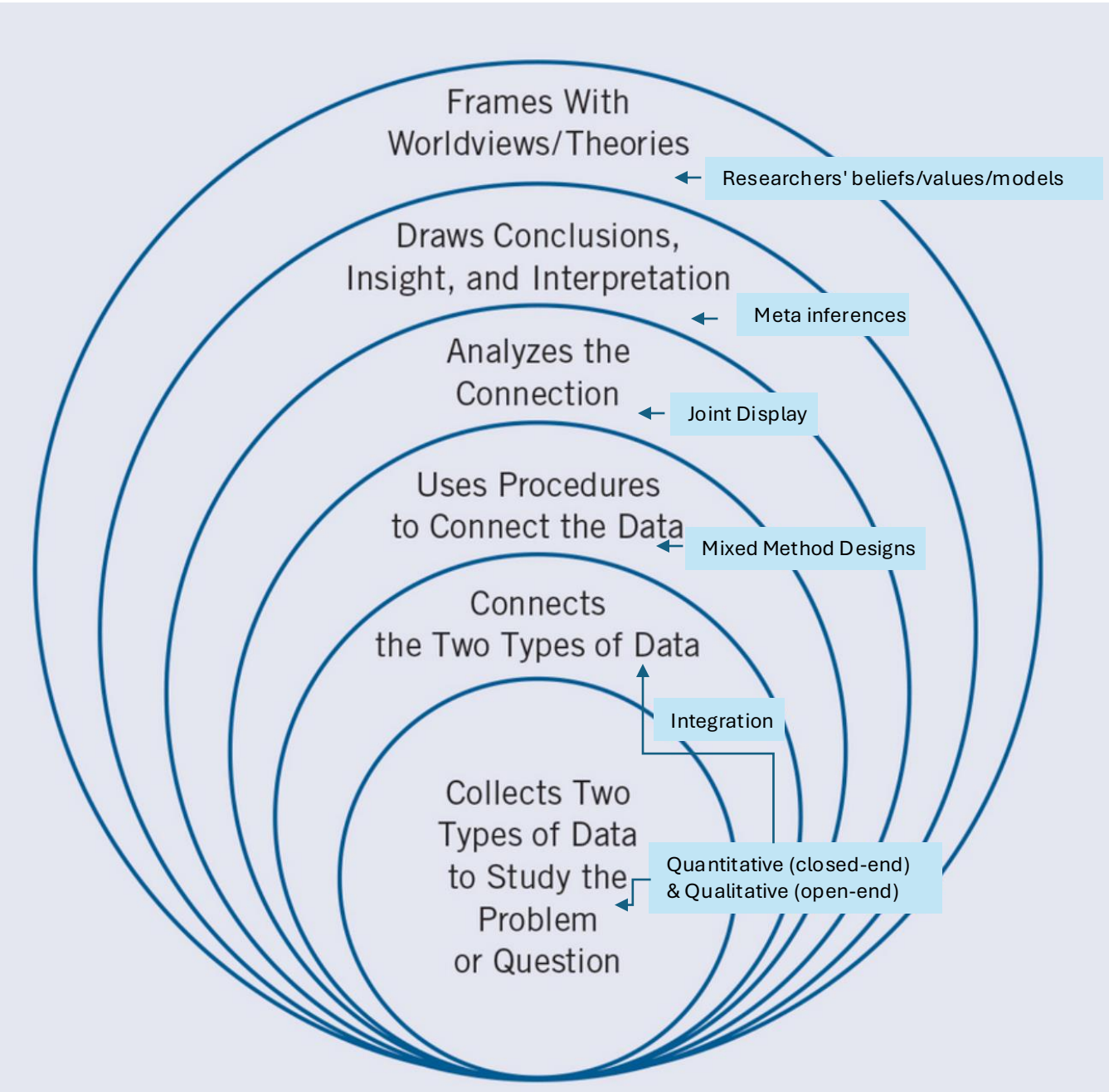


Figure 2: Essential components of mixed-method research

Justification for using mixed methods



A proposal must define and describe the mixed methods approach clearly (including the philosophical worldview or theoretical framework) so that readers understand the researcher's plans.

Developing	Developing a complete understanding of a research problem by combining the quantitative and qualitative results
Explaining	Explaining quantitative results in more detail with qualitative data
Improving	Improving measures, scales, and instruments by incorporating the views of participants who received the instruments
Augmenting	Augmenting experiments or trials by incorporating the perspectives of individuals
Developing	Developing cases (i.e., organizations, units, or programs) or documenting diverse cases for comparisons
Evaluating	Evaluating programs based on combining quantitative and qualitative data
Developing	Developing a complete understanding of changes needed for a marginalized group through the combination of qualitative and quantitative data

DEFINITIONS OF MIXED METHODS TERMS



Open- and Closed-Ended Data: open-ended data refers to qualitative information collected through questions that allow unrestricted, detailed responses, while closed-ended data refers to quantitative information gathered through fixed-response options that can be easily categorized or measured.

Research Design: is the structured plan that integrates qualitative and quantitative approaches to address a research problem comprehensively.

Integration: is the process of combining qualitative and quantitative data to draw more comprehensive and meaningful conclusions.

Joint Display: is a visual or tabular representation that integrates qualitative and quantitative data side by side to facilitate comparison and interpretation.

Metainferences: are the overall conclusions drawn by integrating findings from both qualitative and quantitative data.

THE PROCESS OF CONDUCTING A MIXED METHODS STUDY



QUANTITATIVE AND QUALITATIVE DATA COLLECTION



Core Mixed Methods Designs

- The convergent design
- The explanatory sequential design
- The exploratory sequential design

Complex Mixed Methods Designs

- Mixed Methods Experimental Design
- Mixed Methods Case Study Design
- Mixed Methods Participatory-Social Justice Design
- Mixed Methods Evaluation Design

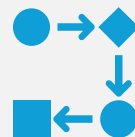
THE PROCESS OF CONDUCTING A MIXED METHODS STUDY (CORE)



The convergent design:
Quantitative & qualitative data
collected simultaneously, analyzed
separately, then merged.



The explanatory sequential design:
Quantitative first, then qualitative
to explain results



The exploratory sequential design:
Qualitative first (exploration), then
quantitative to generalize or test.



THE PROCESS OF CONDUCTING A MIXED METHODS STUDY (CORE)

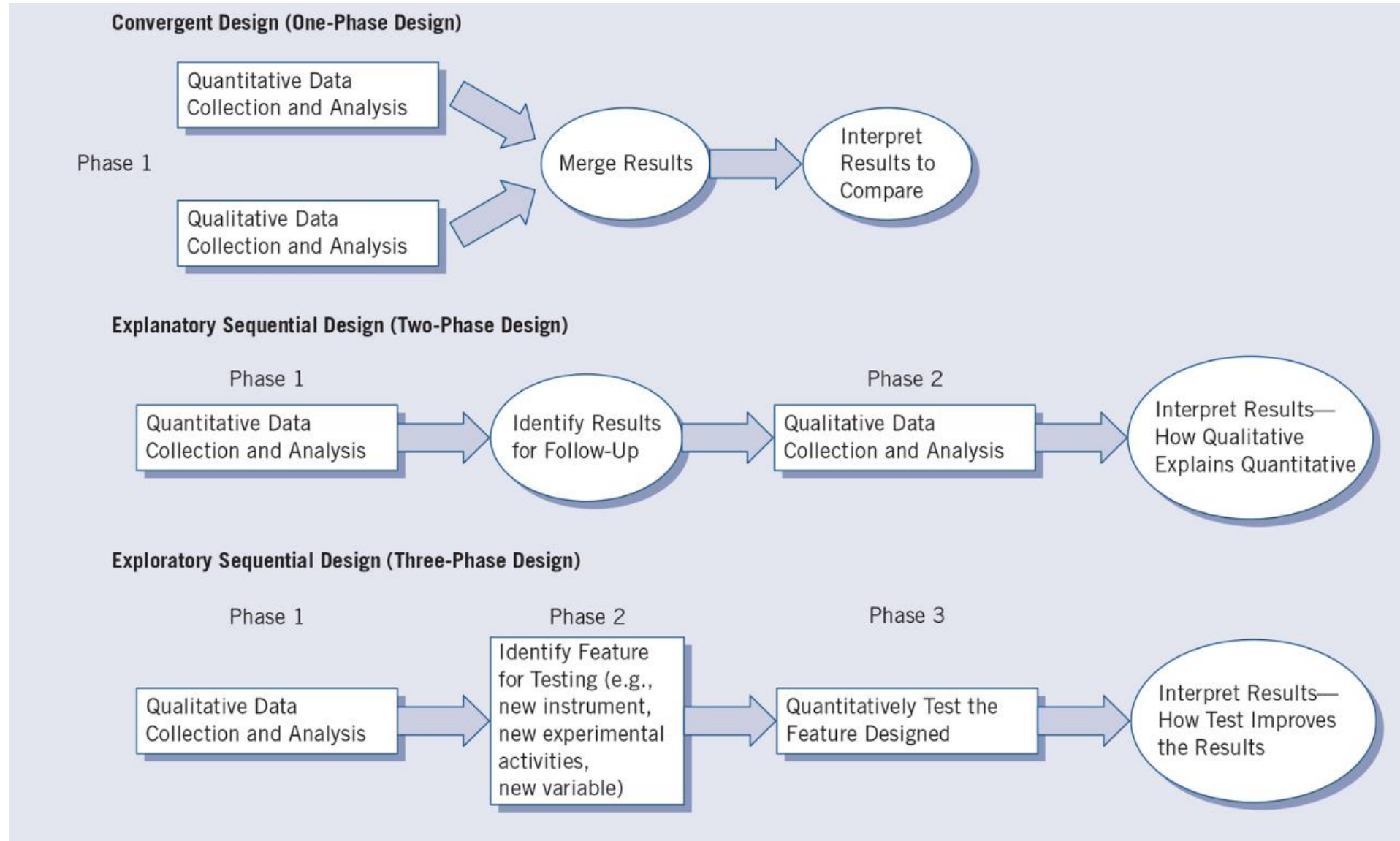


Figure 4. Three Core Designs

THE PROCESS OF CONDUCTING A MIXED METHODS STUDY (CORE)

Explanatory
Sequential Mixed
Methods Design

Quantitative Scores	Qualitative Follow-Up Themes	Metainferences
High Scores	Theme 1 Theme 2 Theme 3	How Themes Explain the Scores
Medium Scores	Theme 4 Theme 5 Theme 6	How Themes Explain the Scores
Low Scores	Theme 7 Theme 8 Theme 9	How Themes Explain the Scores

Table 1: Template for Explanatory Sequential Mixed Methods Design

THE PROCESS OF CONDUCTING A MIXED METHODS STUDY (Example)

Research Topic: The effect of online learning on high school students' academic motivation.

Phase 1 (Quantitative):

A researcher surveys 300 students using a motivation scale to measure their levels of academic motivation in online versus traditional classes.

=> Result: Students in online classes report significantly lower motivation.

Phase 2 (Qualitative):

The researcher interviews 15 students from the online group to explore *why* they feel less motivated.

=> Students explain that they feel isolated and lack interaction with peers and teachers.

Integration:

Quantitative results show *what* happens (lower motivation), and qualitative results explain *why* (lack of social connection).

Example: Sequential Mixed Methods Design

Complex Mixed Methods Design

Complex designs mean that the core designs are embedded in frameworks or processes larger than simply collecting, analyzing, and integrating quantitative and qualitative data.

As per Plano Clark and Ivankova (2016), where they discussed the intersection of mixed methods with other approaches to form “advanced applications”

According to Nastasi and Hitchcock, complex designs required multiple phases, multiyear projects, substantial funds, multiple research years, and several core designs.

Examples of Complex Designs:

- Mixed methods experimental (or intervention) design
- The mixed methods case study design
- The mixed methods participatory-social justice design



Complex Mixed Methods Design

Mixed Methods Experimental Design

A design in which a mixed methods core design (e.g., explanatory sequential) is embedded within an experimental or intervention framework; quantitative experimental data are collected, and then qualitative (or vice versa) data are used to explain or expand the experimental results.

Mixed Methods Case Study Design

A design where the mixed methods core is embedded in a case study framework; the researcher uses both qualitative and quantitative data to examine a bounded case (or cases) in depth.

Mixed Methods Participatory-Social Justice Design

A design that embeds the core mixed methods procedures within a participatory or social justice theoretical/conceptual framework—so the study is not only mixing methods, but also oriented toward participant collaboration, empowerment, or addressing inequities.

Mixed Methods Evaluation Design

A design where the mixed methods core is embedded within an evaluation framework (e.g., program evaluation, policy evaluation) and uses both qualitative and quantitative data across multiple phases to evaluate interventions, programs, policies.

Complex Mixed Methods Design

A Mixed Methods
Intervention Design

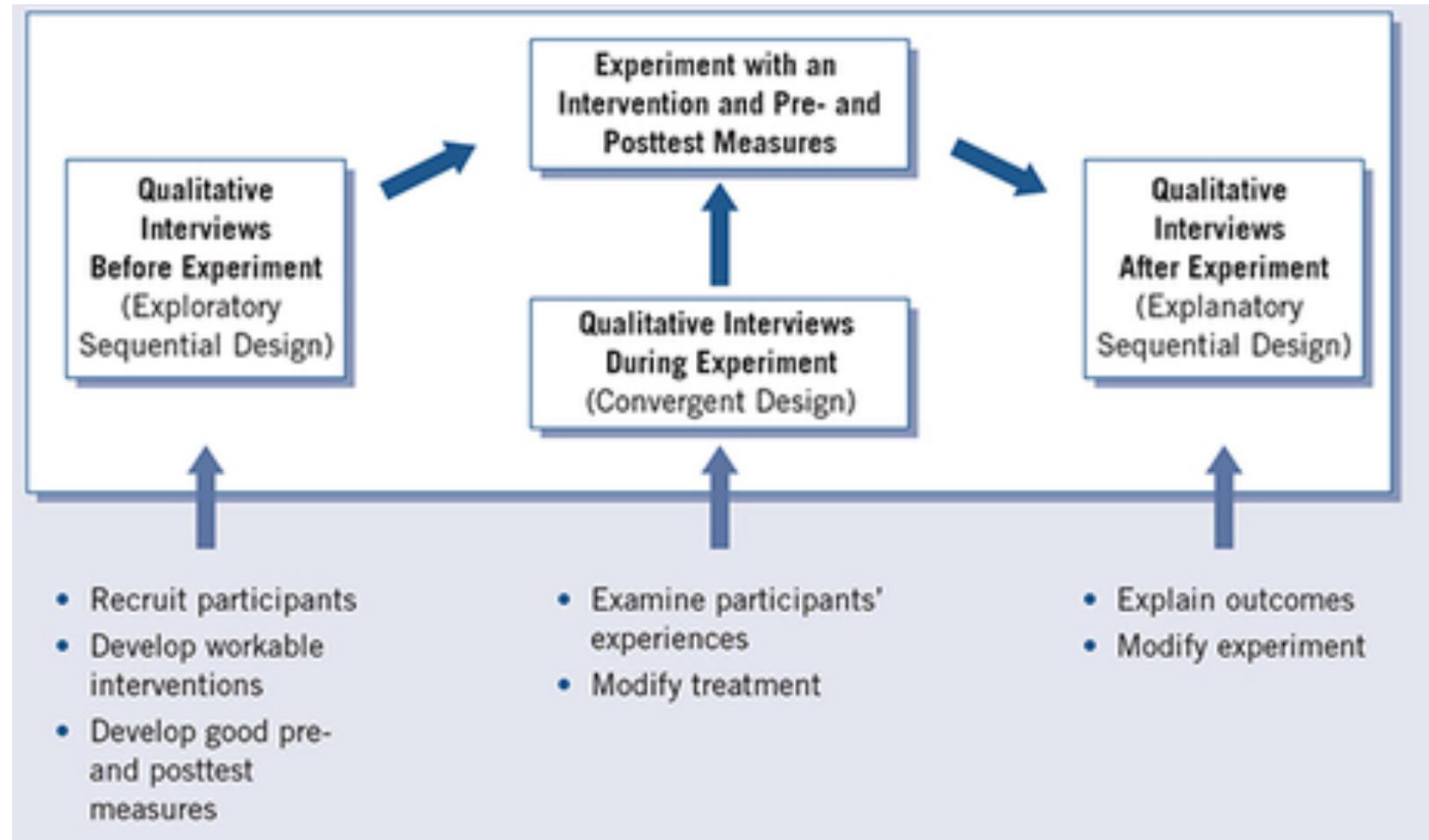


Figure 5: A Mixed Methods Intervention Design Diagram



Complex Mixed Methods Design

Research Topic: Evaluating the effectiveness of a mindfulness program to reduce nurse burnout.

Quantitative Phase (Core):

An experimental study is conducted — one group of nurses participates in an 8-week mindfulness program, while another group does not.

=> Pre- and post-tests measure burnout levels using a validated scale.

=> Results show a significant reduction in burnout in the intervention group.

Qualitative Phase (Embedded):

After the program, focus groups and interviews are conducted with participants to understand their experiences and how the mindfulness techniques affected their stress levels.

=> Nurses describe better emotional control, improved sleep, and stronger teamwork.

Integration:

The qualitative findings explain *how* and *why* the quantitative improvements occurred — providing deeper insight into the intervention's impact.

Example: A Mixed Methods Intervention Design Diagram



Factors Important in Choosing a Mixed Methods Design

- The choice of a mixed methods design is based on several factors that relate to the intent of the procedures and practical considerations.
 - Choice Based on Intent and Procedures
 - Popular Designs in a Field or Discipline
 - The Single Researcher Versus a Team
 - Choice of Design by Advisers or Men
-



Mixed method strategy to consider

Factors to be considered when selecting a mixed methods design

- The purpose of the study: What do you hope to accomplish by integrating methods?
 - The research questions and the types of mixing that make sense for them.
 - Resources, including time, expertise (you may need expertise in both qualitative and quantitative methods), and feasibility.
 - The audience and how you will convey the mixed methods approach clearly (since it may be less familiar).
 - The practicality of integrating datasets and the sample sizes needed.
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Key Takeaways

- Mixed methods research is more than just doing qualitative and quantitative—it's about integrating them in a deliberate design so that the combination yields stronger or more comprehensive insights than either alone.
- A clear mixed methods proposal must articulate how and when the different strands (quantitative and qualitative) will be implemented, their relative weight/priority, and how they will be combined.
- Visual models and diagrams are very helpful in conveying the design to readers.
- The choice of mixed methods strategy should map logically to the research question(s), available resources, and the level of integration desired.
- Validity/trustworthiness in mixed methods requires attending to both the separate strands and their integration (often called “legitimation” of the mixed methods study).
- The structure of the report (or proposal) should reflect the chosen design (sequential vs concurrent) so that the reader follows the logic of how data were collected, analyzed, integrated, and interpreted.