Fit for Purpose: Matching research designs to research questions

...AND MIXING METHODS TO GET THE MOST VALUABLE DATA

Mary E. Losch
Professor & Director
UNI Center for Social & Behavioral Research
Leaving aside for now... Ontology, Epistemology

The important philosophical underpinnings of the nature of knowledge, how it can be determined and what biases we hold play important roles in the work of research and should be considered carefully – but not today.
Focus - general research approaches

Quantitative
Qualitative
Mixed Methods
First Steps

- Clarify your inquiry and key question(s) – critical importance
- Is this research or evaluation or perhaps both?
- Examine the existing literature and theory carefully (where applicable)
- Examine the strengths and weaknesses of overall approaches and their suitability for the questions
- Begin unfettered by practical limitations – what would you do if you had no resource constraints?
Clarify your inquiry and key question(s) – critical importance

- What am I trying to learn/understand?
- Look for precision here (not in terms of expected findings but in terms of truly knowing what you are seeking and from whom)
Is this research or evaluation or perhaps both?

- Is the work being designed to contribute to generalizable knowledge?
- Is the work an evaluation aimed at laying the groundwork for future decisions, informing a process, or determining outcomes?
- Sometimes both can be true in the same project
Examine the existing literature carefully

- What is known?
- What paradigms or approaches were used to gather previous findings?
- This information will be more available for research but can sometimes be found in technical reports detailing program and project evaluations.
Examine the strengths and weaknesses of overall approaches and their suitability for the questions

- How will the information be used?
- Will causal inference be needed?
- How precise will the findings need to be?
- What constraints exist that will affect the research design and/or methods chosen?
Begin unfettered by practical limitations – what would you do if you had no resource constraints?

- How would I design the study if I had no time constraints?
- How would I design the study if I had no funding constraints?
- How would I design the study if I had no staff/talent limitations?
Choosing an overall approach

- Quantitative
- Qualitative
- Mixed Methods (some of both)
Quantitative methods tend to be...

- Descriptive/Confirmatory
- Structured to allow determination of strength of relationships
- Comprised of carefully developed (e.g., survey questions) psychometrically tested (e.g., scales) bounded measures
- Delivered "at arm’s length" or in the lab
Quantitative

Deductive research, goal is to test theories/hypotheses, to describe or examine relationships among variables. The variables are measured in systematic ways and yield numeric data that’s usually analyzed statistically. Can provide measurable evidence, help establish (probable) cause and effect, and create a framework for replication and generalization to a population.

Experimental Designs (RCT, Case-Controls)
Quasi-Experimental Designs
Surveys
Quantitative

Strengths

- Metrics for reliability/validity
- Potential for generalizability
- Some methods can be completed in short amounts of time and for relatively low costs
- Comparable data across people/groups/places - apples/apples

Weaknesses

- Can lack depth of meaning and context
- Some designs are resource-intensive
- Some populations difficult to find/recruit
- Analytic complexity for some designs
Qualitative

Focus on the contexts/meaning/experiences for the purpose of inductive research. Can still be systematic and rigorous form of inquiry with many analytic approaches. Helps in understanding processes, especially those that emerge over time, provide detailed information about setting or context, and emphasize the participants’ voices.

- Ethnography
- In-depth Interviews
- Focus Groups
- Document Analysis
- Observations
Qualitative

Weaknesses

- No metrics for reliability/validity
- Can’t be generalized
- Resource intensive
- More difficult to compare findings with less systematic approach to questions
- Skills challenging to master

Strengths

- More depth of meaning and context
- Can illuminate and discover - richness
- Can explore low-incidence or stigmatized groups
Qualitative methods tend to be...

- Exploratory
- Personal
- (Mostly) field-based
- Iterative or circular
Mixed Methods

Moves us from either/or to a focus on gathering evidence based on the nature of the question. Applied research (e.g., social / health / educational) targets varied sources and multiple levels of influence on a given problem (e.g., policies, organizations, family, individual).

Quantitative methods are well-suited for measuring pervasiveness of "known" phenomena and key patterns of association, including inferences of causality – **what and whether**. Qualitative methods allow for identification of previously unknown processes looking more at **why and how** phenomena occur and their boundaries.

Mixed methods research, then, is more than analyzing your open-ended items in a survey. **It is the intentional collection of both quantitative and qualitative data in specific combinations to capitalize on the strengths of each to more fully answer research questions.**
Having both sets of tools allows us to choose designs based on what is the best fit for a specific applied or evaluation purpose.

Conducting mixed methods research allows for triangulation (i.e., using several means (methods, data sources and researchers) to examine the same phenomenon).

Triangulation increases understanding more accurately by approaching it from different vantage points using different methods and techniques.
Mixed Methods are especially valuable when:

- **There is a need to validate or corroborate the results obtained from other methods.**

- **One method can be informed by another method.** Concept testing, pilot testing to provide info about little-known topics, cognitive interviewing, post-survey focus groups to understand apparently conflicting responses.

- **Triangulation is desired** - Continuously looking at a research question from different angles, and clarify unexpected findings and/or potential contradictions.

- **We want to elaborate, clarify, or build on findings from other methods.** Qualitative methods can help us understand and explain the causal relationships found in previous quantitative studies.

- **We want to develop a theory about a phenomenon of interest and then test it.** Usually, qualitative research is more suitable to build theory, while quantitative research provides a better way of testing theories.

- **When one wants to generalize findings from qualitative research.** We can shift to a quantitative approach to see whether the findings hold and generalize to broader populations.

See: [http://resourcecentre.foodrisc.org/mixed-methods-research_185.html](http://resourcecentre.foodrisc.org/mixed-methods-research_185.html)
What if I don’t know how to do all this stuff?

- Learn a few new tricks - training is more available than ever
- Collaborate with faculty and staff colleagues with complementary skill sets
- Seek out expertise near and far
- Have your students learn and lead
Consider

- Choosing methods and analyses with which you have some training or experience (or colleagues who do).
  - All of these methods require minimal levels of expertise and knowledge.
- Starting small and build your skill and confidence
- Document your decisions and rationale for design choices
- Calling us if we can be helpful
Remember

- No approach is perfect, including mixed methods
- All method choices are ultimately constrained by our resources (skill, time, money)
- Designing approaches should be creative and fun
References & Suggested Reading


Thanks!

TIME FOR QUESTIONS & DISCUSSION