

An Introduction to Mixed Method Research

Jennifer Byrne, BA, & Áine M. Humble, PhD
 Atlantic Research Centre for Family-Work Issues
 Mount Saint Vincent University
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What is a mixed method design?

- *Mixed methods design* incorporates techniques from qualitative *and* quantitative methods to answer research questions.
- Mixed methods social inquirers choose from a full repertoire of methodological options at any number of multiple points in an inquiry process – purpose, overall design, methods, sampling, data recording, analysis, and interpretation. A truly mixed methodology incorporates multiple approaches in all stages of the study; however the researcher may choose certain points of contact as well.

Why use mixed methods design?

- Because all methods of data collection have limitations, the use of multiple methods can neutralize or cancel out some of the disadvantages of certain methods. As well, the strengths of each approach can complement each other.
- Because social phenomena are so complex, different kinds of methods are needed to best understand these complexities.
- It is particularly appropriate for collaborative and applied research.
- It enables the researcher to answer confirmatory and exploratory questions at the same time, and as a result the researcher is able to construct and confirm theory in the same study.
- It can provide explanations for seemingly contradictory results that emerge from using different methods.

How does mixed method design fit into “the paradigm debate”?

- Paradigms are social constructions, historically and culturally embedded discourse practices. They reflect the basic belief systems or worldviews of researchers, involving ideas around how knowledge is created and how change can be accomplished or facilitated.
- The *paradigm debate* refers to an ongoing discussion regarding whether or not a paradigm should be bound to a particular methodology. Paradigm purists have said that it is impossible to have compatibility between quantitative and qualitative methods due to the

incompatibility of paradigms underlying the methods. Thus, from this perspective, a person should/could only do qualitative research **or** quantitative research.

- From a mixed methods perspective, however, it is seen as “perfectly logical for researchers to select and use differing methods, mixing them as they see the need, applying their findings to a reality that is at once plural and unknown” (Maxcy, 2003, p. 59). Thus, a specific research issue or social problem determines the methodology of a study rather than a philosophical position (Niglas, 1999, as cited in Greene & Caracelli, 2003). Moreover, mixed methods researchers point out that paradigms, similar to other discourses, are socially constructed, and thus “neither inviolate nor unchanging” (Greene & Caracelli, 2003, p. 95). As such, how researchers think about the relationship between paradigms and methodology can continue to evolve.

Definitions

- In the literature there are many terms used by researchers, often with slightly different words or phrases, which can be confusing.
- Creswell, Clark, Gutmann, & Hanson (2003) provide a good overview of these various classifications of mixed methods designs, which can be found in Table 8.1 (pp. 216-217) in the *Handbook of Mixed Methods in Social & Behavioral Research*.

Below are three terms that we have found to provide the simplest understanding of multiple method designs:

- First, a *mixed methods design* can be divided into two categories: *mixed model research* and *mixed methods research*.
 - *Mixed model research* involves qualitative and quantitative projects being mixed in more than one stage of the study (questions, research methods, data collection and data analysis, and the interpretation or inference process) (Teddlie & Tashakkori, 2003).
Example: A researcher conducts surveys with a large group of individuals, and also conducts in-depth interviews with a sub-sample of those individuals, seeking to find general trends in the population and also to provide greater detail regarding any unexpected findings that may arise.
 - *Mixed methods research* involves the collection or analysis of quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially and only the data is integrated at one or more stages in the process of the research (Teddlie & Tashakkori, 2003).
Example: A survey completed on-line has mostly closed-ended questions (i.e., individuals asked to respond to statements on a 5-point Likert-type scale), but also has some sections where respondents may type in their own words to follow up on any responses given to the closed-ended questions.
- A *multimethod design* is different from a mixed methods design. It involves qualitative and quantitative projects that are relatively complete on their own, and then used together to form essential components of one research program. Thus, each study is planned and conducted to answer a particular sub-question, and the results of the research triangulated to form a comprehensive whole (Morse, 2003). Additionally, each method maintains its own worldview.

Example: In our project, “When caregiving results in involuntary retirement: Well-being in the later years”, we conducted two separate projects, each designed to answer a different question. In the first project, we conducted quantitative secondary data analysis of the 2002 General Social Survey to explore the relationship between caregiving, retirement congruency, and gender. The second project consisted of in-depth interviews with a different sample of individuals, designed to (a) obtain more detail regarding the complexity of the retirement decision for individuals who have caregiving responsibilities, and (b) obtain information that the first analysis was unable to provide. Each analysis was a separate study on its own, and the results integrated together in the final report.

Factors to determine what mixed methods design to use:

- The implementation of data collection. This refers to the order in which the researcher collects the data. It can be done sequentially or concurrently. Sequential implementation may be explanatory or exploratory (Creswell, 2002, as cited in Teddlie & Tashakkori, 2003). In *explanatory sequential research* the investigator collects quantitative data and then collects qualitative data to help explain or elaborate on the quantitative results. In *exploratory sequential research* the investigator gathers qualitative data to explore a phenomenon and then collects quantitative data to explain the relationships found in the qualitative data. In *concurrent research* the investigator gathers qualitative and quantitative data at the same time and compares the data to look for similar findings (Morse, 2003).
- The priority given to quantitative or qualitative research. In using a mixed methods design the researcher has several options regarding the priority of the research. The researcher can give the same priority to both methods or can emphasize one method over the other.
- The stage of integration. The stage at which the researcher decides to integrate the research depends on a number of factors including the purpose of the research, at which stage it will be easiest to integrate, the researcher’s understanding of the stages of research, and the purpose of the study.
- Creswell et al. (2003) have created a “Decision Matrix for Determining a Mixed Methods Design”, which includes the above three factors as well as theoretical considerations. This can be found in Figure 8.3 (p. 218) in the *Handbook of Mixed Methods in Social & Behavioral Research*.

Notations used in mixed methods design:

- QUAN or QUAL – abbreviations used to indicate whether the method is quantitative or qualitative.
- The plus sign (+) is used to show that the data are collected at the same time.
- The arrow (→) is used to show that data are first collected for one project and once this project is complete, data are collected for a second project.
- The use of uppercase letters is used to indicate priority given to a particular method.¹

¹ As stated earlier, however, in some cases equal weight may be given to both methods.

Examples:

QUAL + quan indicates a qualitatively driven project, involving qualitative and quantitative data collected at the same time.

QUAN → quan indicates a quantitatively-driven project, in which a quantitative project is conducted first followed by a second quantitative project, which is designed to expand on findings from the first project.

Common Combinations (Morse, 2003):

Inductive theoretical drive:

QUAL + qual

QUAL → qual

QUAL + quan

QUAL → quan

Deductive theoretical drive:

QUAN + quan

QUAN → quan

QUAN + qual

QUAN → qual

References

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