Chapter 1
The Nature of Research Methodologies:
Terms and Usage within Quantitative, Qualitative, and Mixed Methods

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ABSTRACT

Mixed methods research is, generally speaking, an approach to knowledge (theory to practice) that attempts to consider multiple viewpoints, perspectives, positions, and standpoints. As such, before the advent of mixed methods, many studies used multiple methods to achieve the benefits of triangulation without restricting themselves to any paradigmatic membership or methodological category. Today, the primary philosophy of mixed research is that of pragmatism. This chapter will cover the history and the foundation of research methodologies and explain the purpose of research within various methodologies. This chapter will also explain the various terminologies used within research and research design as well as the meaning of these terminologies. This chapter will not cover statistics, however, mixed methods, methodology, research, and paradigm, statistical research methodology will be touched upon.

INTRODUCTION

Debates about singular or universal truths or approaches to viewing the world (Socrates, Plato), versus multiple or relative truths (the Sophists such as Protagoras and Gorgias), versus balances or mixtures of the extremes (Aristotle's "golden mean" or principle of balance, moderate skepticism, Cicero, Sextus Empiricus), go back, at least, to ancient Western philosophy, and the spirit of these debates lives today in the different views of the three major approaches to social research. According to Plato, Protagoras said that "man is the measure of all things," and in many ways the history of Western philosophy still is debating Protagoras and the other Sophists[1]. This debate continues to affect how we view knowledge, what we look for, what we expect to find, and how we believe we are to go about finding and justifying *knowledge*. Mixed research is between the extremes Plato (quantitative research) and the Sophists (quali-

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tative research), with mixed research attempting to respect fully the wisdom of both of these viewpoints while also seeking a workable middle solution for many (research) problems of interest.

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BRIEF HISTORY OF RESEARCH METHODOLOGIES

Before the advent of mixed methods, many studies used multiple methods to achieve the benefits of triangulation (Galton & Wilcocks, 1983) without restricting themselves to any paradigmatic membership or methodological category (Tashakkori & Teddlie, 2003a). However, there was still awareness of the difficulties present in producing results based on multiple data types. Thus, during the last 50 years, writers have used different names, making it difficult to locate articles that might relate to mixed methods research. Mixed methods has been called *multitrait/multimethod research* (Campbell & Fiske, 1959), which recognizes the collection of several quantitative methods in a single investigation; *integrated* or *combined*, in the sense that two forms of data are blended together (Jason & Onwuegbuzie, 2004, p. 17; Steckler, McLeroy, Goodman, Bird, & McCormick, 1992); and *quantitative and qualitative methods* (Fielding & Fielding, 1986), which acknowledges that the approach is actually a combination of methods. It has been called *hybrids* (Ragin, Nagel, & White, 2004); *methodological triangulation* (Morse, 1991a), which recognizes the convergence of quantitative and qualitative data; *combined research* (Creswell, 1994); and *mixed methodology*, which acknowledges that it is both a method and a philosophical worldview (Tashakkori & Teddlie, 1998). It has also been called the *third methodological movement* following the developments of first quantitative research and then qualitative research (Tashakkori &Teddlie, 2002, p. 5), the *third research paradigm* (Johnson & Onwuegbuzie, 2004, p. 15), and *a new star in social science sky* (Mayring, 2007, p. 1).

Nevertheless, the beginning of mixed methods is cited by some (Creswell & Plano-Clark, 2007, p. 5; Johnson, Onwuegbuzie, & Turner, 2007) to Campbell and Fiske (1959) who used multiple quantitative measures in a single study and referred to this as *multitrait* of *multimethod* research. These numerical beginnings served to demonstrate how by juxtaposing the results of multiple methods, different facets of a phenomenon can be identified—a concept later formalized by Webb, Campbell, Schwartz, and Sechrest (1966) as *triangulation*. Triangulation is seen to increase validity when multiple findings wither confirm or confound each other. A second argument for triangulation is that "all methods have inherent biases and limitations, so use of only one method to assess a given phenomenon will inevitably yield biased and limited results" (Greene, Caracelli, & Graham, 1989, p. 256). In accord, triangulation is often cited as having methodological superiority over single methods (Tran, 2014a).

Mixed research, in its recent history in the social and behavioral or human sciences, started with researchers and methodologists who believed qualitative *and* quantitative viewpoints and methods were useful as they addressed their research questions (Johnson et al., 2007). For the first 60 years or so of