Mixed-Methods Research Methodologies

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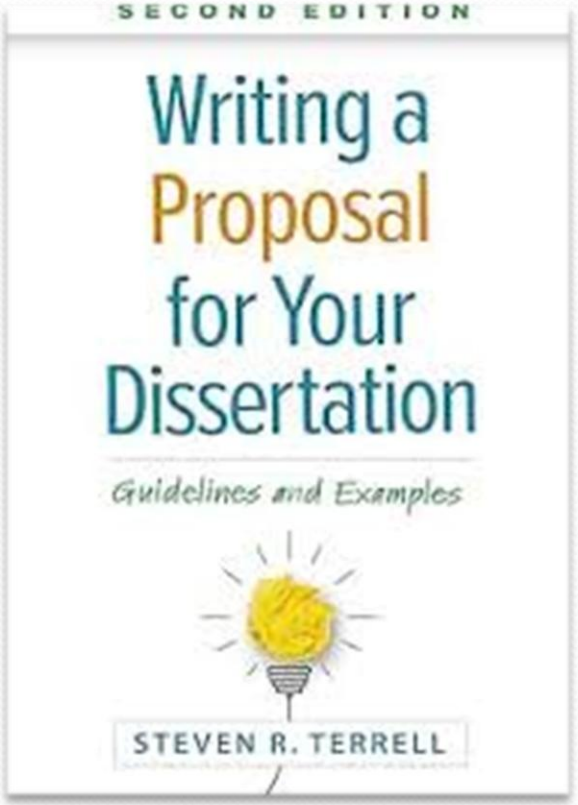

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Mixed-Methods Studies

Studies that are products of the pragmatist paradigm and that combine the qualitative and quantitative approaches within different phases of the research process (Tashakkori & Teddlie, 2008, p.22).

The Origins of Mixed-Methods Lie in the Two Major Research Paradigms

- Quantitative research (i.e., a positivist paradigm) has historically been the cornerstone of social-science research. Purists call for researchers to "eliminate their biases, remain emotionally detached and uninvolved with the objects of study and test or empirically justify their stated hypotheses" (Johnson & Onwuegbuzie, 2004, p.14).

- Qualitative purists support a constructivist or interpretivist paradigm and "contend that multiple-constructed realities abound, that time- and context-free generalizations are neither desirable nor possible, that research is value-bound, that it is impossible to differentiate fully causes and effects, that logic flows from specific to general and that knower and known cannot be separated because the subjective knower is the only source of reality" (Johnson & Onwuegbuzie, 2004, p. 14).

The End of the "Paradigm Wars" and the Emergence of Mixed Methods

- Calls in the 80's and 90's for "a truce" between the two major paradigms.
- Many major authors and researchers felt that quantitative and qualitative research methodologies are compatible.
- Paradigm relativism – "the use of whatever philosophical and/or methodological approach (that) works for the particular research problem under study" (Tashakkori & Teddlie, 2008, p. 9).
- Many social-scientists now believe there is no major problem area that should be studied exclusively with one research method.
- Quantitative tells us "If"; qualitative tells us "Who, what when, where and why."

Defining Features of Mixed Methods

- Uses quantitative and qualitative data (e.g., numeric scores, open- and closed-ended questions etc.).
- Data can be collected concurrently or sequentially; depending upon the design.
- Priority can be given to either data type or they can be considered equally.
- Allows researchers to expand an understanding from one method to another in order to converge or confirm findings.
- Research is based on the breadth of generalization offered by quantitative research with the depth of detailed understanding offered by qualitative research.

Required Researcher Skills*

- Knowledge of various research methods used.
- Understanding of assumptions underlying each research method.
- Working knowledge of analytic procedures and tools related to both quantitative and qualitative research.
- Ability to understand and interpret results from the different methods.
- Willingness to accept and forego methodological prejudices from prior training in a given discipline.
- Understanding of different disciplines, audiences and appropriate studies where mixed methods are acceptable.

* Adapted from Bazely (2004).

The Type of Mixed-Method Approach Depends Upon Four Factors

- Interaction
  - A strand is basic part of a design encompassing either the qualitative or quantitative component.
  - Interactive – the process or results of one strand may influence the process or results of the second strand (e.g., the results of the quantitative strand may affect the manner by which the qualitative strand is conducted). Interaction may occur at any point during the study.
  - Independent – the two strands are distinct (i.e., separate research questions, data collection, etc.). The strands only interact at the end of the study during interpretation.

- Priority
  - Quantitative – greater emphasis is placed on the quantitative strand.
  - Qualitative- greater emphasis is placed on the qualitative strand.
  - Equal – the quantitative and qualitative strands contribute equally.

- Timing (i.e., the sequence of our strands)
  - Quantitative first.
  - Qualitative first.
  - Concurrent.

- Mixing – the point where the data are integrated to answer research questions.
  - During data collection.
  - During interpretation.

Three Common Type of Mixed Methods Designs *

- Sequential Explanatory
  - Quantitative Strand One
    - Positivist
    - Investigates cause and effect.
  - Qualitative Strand Two
    - Constructivist
    - Investigates meaning based on observation or personal experience, ultimately combined into a broad pattern or understanding.

- Sequential Exploratory
  - Qualitative Strand One
  - Quantitative Stand Two

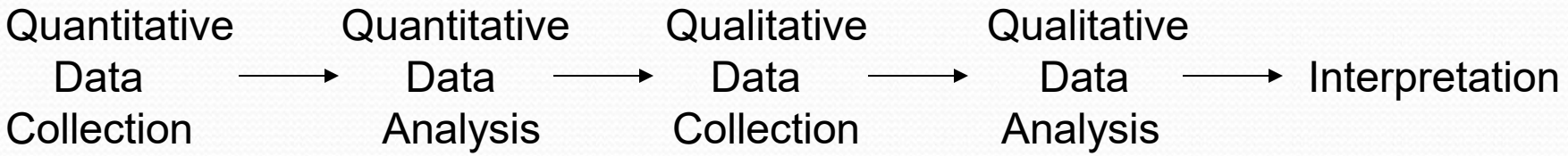
- Convergent
  - Strands One and Two are concurrent and independent.
  - Pragmatism as an over-arching philosophy.

* Adapted from Creswell & Plano Clark (2009).

Sequential Explanatory Strategy

- The collection and analysis of quantitative data followed by the collection and analysis of qualitative data.
- Primary focus is to explain quantitative results by using qualitative data to explore certain results in more detail or help explain unexpected results (e.g., using follow-up interviews to better understand the results of a quantitative study).
- Interaction
  - Interactive – the results of the quantitative strand can influence actions or decisions in the qualitative strand.
- Priority
  - Greater emphasis is placed on the quantitative strand.
- Timing
  - Sequential - quantitative first.
- Mixing
  - Integration occurs during data collection.

Sequential Explanatory Strategy



Sequential Explanatory Example

- Problem – students have low levels of achievement.
- Cognitive Evaluation Theory – more frequent feedback leads to higher levels of intrinsic motivation.
- Students receiving weekly report cards will demonstrate higher levels of achievement than students receiving report cards every six weeks.
- Primary focus is to explain quantitative results by using qualitative data to explore certain results in more detail or help explain unexpected results (e.g., using interviews with students to better understand the quantitative results).
- Interaction – the results of the quantitative strand can influence actions or decisions in the qualitative strand.
- Priority - greater emphasis is placed on the quantitative strand.
- Timing – sequential, quantitative first.
- Mixing - integration occurs during data collection.

Sequential Exploratory Strategy

- The collection and analysis of qualitative data followed by the collection and analysis of quantitative data.

- Used primarily to explore a phenomenon by:
  - Testing elements of a theory.
  - Generalizing qualitative findings to different samples.
  - Development of instrumentation (e.g., using a small group to create instrumentation and then collecting quantitative data based on the instrumentation).

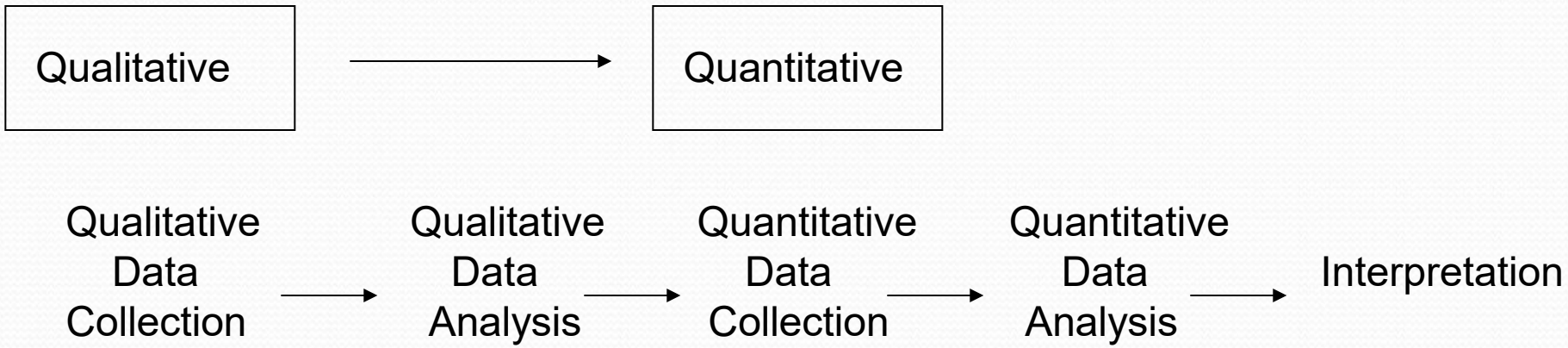
- Interaction
  - Interactive – the results of the qualitative strand can influence actions or decisions in the quantitative strand.

- Priority
  - Greater emphasis is placed on the qualitative strand.

- Timing
  - Sequential – qualitative first.

- Mixing
  - Integration occurs during data collection.

Sequential Exploratory Strategy



Sequential Exploratory Example

- Problem – more accurate information about the need for the collection and analysis of qualitative data followed by the collection and analysis of quantitative data.

- Used primarily to explore a phenomenon by:
  - Testing elements of a theory.
  - Generalizing qualitative findings to different samples.
  - Development of instrumentation (e.g., using a small group to create instrumentation and then collecting quantitative data based on the instrumentation).

- Interaction
  - Interactive – the results of the qualitative strand can influence actions or decisions in the quantitative strand.

- Priority
  - Greater emphasis is placed on the qualitative strand.

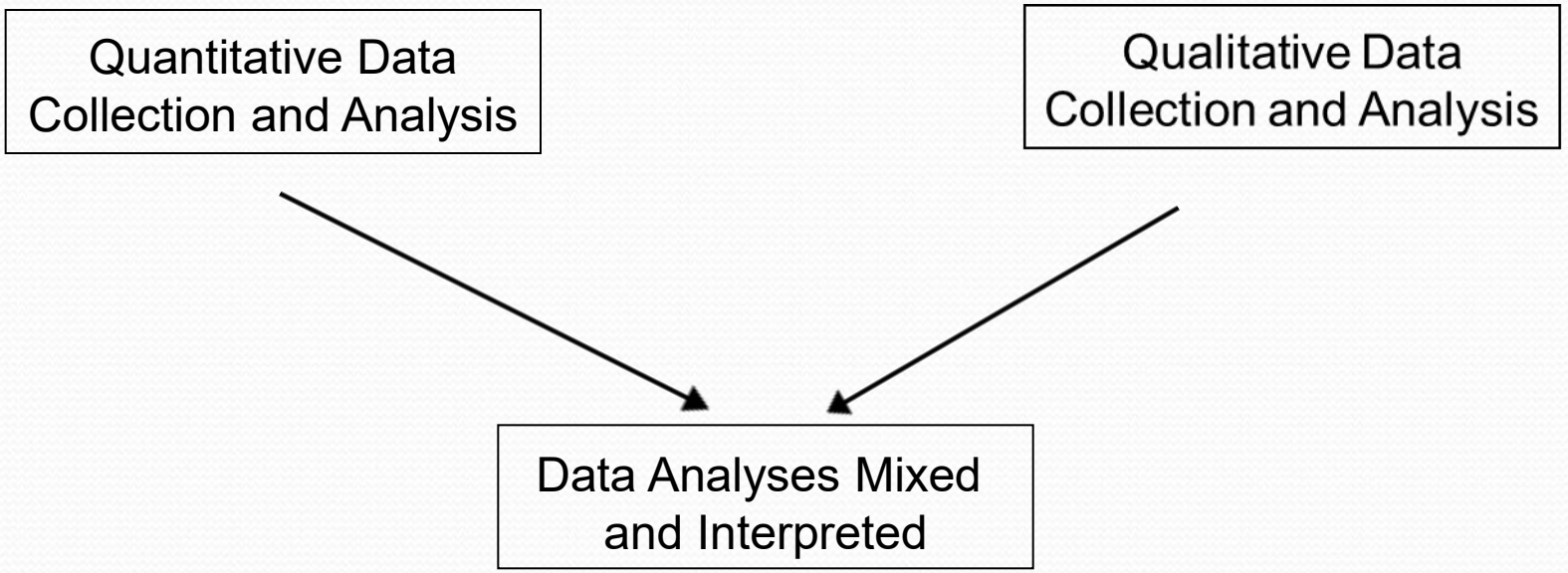
- Timing
  - Sequential – qualitative first.

- Mixing
  - Integration occurs during data collection.

Convergent Strategy

- Qualitative and quantitative data are collected and analyzed concurrently and independently.
- This strategy can be used with different, but complementary data, to develop a better answer to your research questions.
- Interaction
  - Independent – the two strands are implemented so they are independent of one another.
- Priority
  - Equal emphasis is placed on both strands.
- Timing
  - Concurrent – the strands are implemented simultaneously, in one phase of the study.
- Mixing
  - Integration occurs during data interpretation. Researchers are able to make conclusions when synthesizing or comparing the results of the quantitative and qualitative strands.

Convergent Strategy



Commonly Used Means of Quality Control

"Mixed methods are inherently neither more nor less valid than specific approaches to research. As with any research, validity stems more from the appropriateness, thoroughness and effectiveness with which those methods are applied and the care given to thoughtful weighing of the evidence than from the application of a particular set of rules or adherence to an established tradition." (Bazely, 2004)

In short, there are established rules for controlling validity in standard quantitative and qualitative research. These same rules must be followed when the methods are combined.

Ethical Concerns

- Participants must participate voluntarily.
- Participants must understand purpose and procedures of the study.
- Participants must understand that they have the right to a copy of the results.
- Participants must understand the potential benefits of the study and that their privacy will be respected.
- Researchers must understand the impact of their presence at research sites and ensure that these sites are left undisturbed at the end of the study.
- Care must be taken to identify and nullify any actual or perceived issues where power between the researcher and participant could be abused.
- Anonymity must be maintained during data analysis and data kept for a reasonable period of time.
- Ensure that writing is free of bias towards any group (e.g., age, ethnicity, sexual orientation, race, gender, etc.)
- The details of the study must be careful explained within the actual report so as to allow readers the opportunity to judge the ethical quality of the study for themselves.

The Applications of Mixed-Methods Research are Far Ranging*

- Nursing
- Psychology
- Education
- Sociology
- Library and Information Science
- Information Systems
- Political Science

* Click on each discipline name to be linked to an example article.

Key Resources

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Exemplary Studies

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