Analyzing and Interpreting Mixed Methods Research

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Overview

• Brief review
• “Mixing” data in mixed methods
• Presenting a study
• Suggestions/Guidelines
• Examples
• Discussion
Several Mixed Methods Approaches

• **Convergent Parallel**
  — Concurrent
  — Quantitative and qualitative strands are equal

• **Explanatory Sequential**
  — Phased
  — Begins with quantitative

• **Exploratory Sequential**
  — Phased
  — Begins with qualitative

• **Embedded Design**
  — Often concurrent
  — Qualitative or quantitative is privileged
Mixed Methods Research Steps

1. Determine the goal of the study
2. Formulate the research objective(s)
3. Determine the research/mixing rationale
4. Determine the research/mixing purpose
5. Determine the research question(s)
6. Select the sampling design
7. Select the mixed methods research design
8. Collect the data
9. Analyze the data
10. Validate/legitimize the data
11. Interpret the data
12. Write the mixed methods research report
13. Reformulate the research question(s)

(Adapted from Onwuegbuzie & Leech, 2006)
Analytic Challenges

- Analytic decisions (e.g., site-specific analyses)
- “Discovering” the story
- Where to “mix”
- What gets lost in mixing
Integration Points

• Data Collection

• Data Coding/Analysis

• Interpretation
Analyzing qualitative data within a mixed methods framework

- “Talk back” vs. “Talk past”
- Data reduction
- Data display
- Data transformation
- Data consolidation
- Data integration
- Data correlation
- Validity/legitimacy

(Adapted from Creswell, 2006)
Analyzing qualitative data within a mixed methods framework

**Data reduction:** reducing the dimensionality of the qualitative data (e.g., via exploratory thematic analysis, memoing) and quantitative data (e.g., via descriptive statistics, exploratory factor analysis, cluster analysis).

**Data display:** describing pictorially the qualitative data (e.g., matrices, charts, graphs, networks, lists, rubrics, and Venn diagrams) and quantitative data (e.g., tables, graphs).

**Data transformation (optional):** quantitative data are converted into narrative data that can be analyzed qualitatively (i.e., qualitized) and/or qualitative data are converted into numerical codes that can be represented statistically (i.e., quantitized).

(Adapted from Onwuegbuzie & Teddlie, 2003).

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Analyzing qualitative data within a mixed methods framework

**Data correlation:** quantitative data being correlated with qualitized data or qualitative data being correlated with quantitized data.

**Data consolidation:** both quantitative and qualitative data are combined to create new or consolidated variables or data sets.

**Data comparison:** comparing data from the qualitative and quantitative data sources.

**Data integration:** both quantitative and qualitative data are integrated into either a coherent whole or two separate sets (i.e., qualitative and quantitative) of coherent wholes.

(Adapted from Onwuegbuzie & Teddlie, 2003).
Attributes of good mixed methods articles

1. Well developed qual and quan components

- Two distinct strands, each with its own questions, data, analysis, and inferences

- Databases for both components need to be sizable, to be obtained through accepted and rigorous data collection (or conversion) methods, and to be analyzed using sophisticated analytic procedures

- Meaningful inferences must be made from the results of each strand, and validation procedures reported (such as member checks, triangulation, threats to internal validity, etc.).

(Creswell & Tashakkori 2007)
Attributes of good mixed methods articles

2. Mixed methods research must integrate, link, or connect the “strands” in some way
   – By the end of the manuscript, conclusions gleaned from the two strands are integrated to provide a fuller understanding of the phenomenon under study
   – Integration might be in the form of comparing, contrasting, building on, or embedding one type of conclusion with the other

3. The article includes mixed methods components that add to the literature about mixed methods research

(Creswell & Tashakkori 2007)
1. Describe the justification for using a mixed methods approach to the research question

2. Describe the design in terms of the purpose, priority and sequence of methods

3. Describe each method in terms of sampling, data collection and analysis

4. Describe where integration has occurred, how it has occurred and who has participated in it

5. Describe any limitation of one method associated with the present of the other method

6. Describe any insights gained from mixing or integrating methods

O’Cathain et al. (2008)
Good Reporting of A Mixed Methods Study (GRAMMS)

What did they find?

- Researchers ignored the mixed methods design; only described the separate components of a study
- Lack of justification for, and transparency of, the mixed methods design
- Lack of transparency of the individual methods (clear exposition of data collection and analysis)—more of a problem for qual component
- Absence of an attempt at integration of data and findings from different components within a study

O’Cathain et al. (2008)
Aarons et al. (2012)

• **Goal:** To illustrate how mixed method design, analysis, and integration of data can be used to better understand issues related to large-scale evidence-based practice (EBP) implementation impacts on the child welfare provider workforce

• **Design:** component and integrated features of a mixed method design; included longitudinal concurrent and sequential processes
Aarons et al. (2012)

- **Convergence**: concurrent use of qualitative data to validate conclusions reached from quantitative analyses (QUAN → qual); *Did the data provide the same answers to the same questions?* (5 main questions)

- **Complementarity**: obtain depth as well as breadth of understanding (QUAN + QUAL); *Did different methods provide related answers to related questions?* (4 main question sets)

- **Expansion**: sequential examination of data to further elucidate and explain the findings of the quantitative analyses (quan → QUAL); *Did one method provide answers to questions raised by use of the other method?* (1 set of qual questions)