MIXED METHODS
AN INTRODUCTION

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Center for Aging in Diverse Communities
Source: Curry & Nunez-Smith 2017; Definition & Overview of Mixed Methods Designs; in Mixed Methods in Health Sciences Research: A Practical Primer
What is Mixed Methods Research?

- "1+1=3" expresses the idea that the whole is greater than the sum of its parts, representing the synergy and the challenge of integrating qualitative and quantitative methods in research.

  Qualitative + quantitative = more than the individual components

- Read more on the idea of "1+1=3" in MMR at the Journal of Mixed Methods Research.

Source: University of Michigan Mixed Methods Program http://www.mixedmethods.org/
What is Mixed Methods Research?

Mixed methods research (MMR) is “an approach to research in social, behavioral, and health sciences in which the investigator gathers both quantitative (closed-ended) and qualitative (open-ended) data, integrates the two, and then draws interpretations based on the combined strength of both sets of data to understand research problems.” (Creswell 2014, Concise Introduction to Mixed Methods Research)

It is rapidly becoming a popular methodology used in social and health sciences the past 30 years.
## 7 Possible Study Designs (*basic*)

<table>
<thead>
<tr>
<th>Rationale for Mixed Methods</th>
<th>Study Aim</th>
<th>Mixed Methods Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigators need a more complete understanding of the research program</td>
<td>To compare or associate the quantitative results with the qualitative results</td>
<td><strong>Convergent</strong>*</td>
</tr>
<tr>
<td>Investigators’ quantitative results are confusing, contradictory, in need of further explanation</td>
<td>To explain quantitative results with qualitative data</td>
<td><strong>Explanatory Sequential</strong>*</td>
</tr>
<tr>
<td>Investigators do not know what instruments to use, variables to measure, cultural issues that impact results</td>
<td>To explore first before developing an instrument, identifying intervention activities, or finalizing variables</td>
<td><strong>Exploratory Sequential</strong>*</td>
</tr>
</tbody>
</table>

Source: Gallo et al, Mixed Methods Training Program
### 7 Possible Study Designs

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<tr>
<td>Investigators need to add qualitative data to the quantitative component of a trial</td>
<td>To use qualitative results within an intervention trial</td>
<td>Intervention Mixed Methods</td>
</tr>
<tr>
<td>Investigators need a community perspective of context &amp; outcomes</td>
<td>To collect both qualitative data and quantitative data with community input</td>
<td>CBPR Mixed Methods</td>
</tr>
<tr>
<td>Investigators need to assess context, design a program, and test it out</td>
<td>To design and evaluate a program using both quantitative and qualitative results</td>
<td>Multistage Evaluation Mixed Methods</td>
</tr>
<tr>
<td>Investigators need both qualitative and quantitative results to develop in depth case study profiles</td>
<td>To identify detailed cases and to make comparisons among them</td>
<td>Case Study Mixed Methods</td>
</tr>
</tbody>
</table>

Source: Gallo et al, Mixed Methods Training Program
Concurrent/Convergent Design

- **Qualitative Data Collection & Analysis**
- **Quantitative Data Collection & Analysis**

**Merge**
- compare & contrast

**Integrated Interpretation**

**Intent:** To compare results from both databases

*Basic Design*

Source: Gallo et al, Mixed Methods Training Program
Explanatory Sequential Design

Phase 1
Quantitative Data Collection & Analysis

Explained by

Phase 2
Qualitative Data Collection & Analysis

Interpretation

Intent: To use the qualitative data to help explain the quantitative results

* Basic Design

Source: Gallo et al, Mixed Methods Training Program
**Exploratory Sequential Design**

* Basic Design

Source: Gallo et al, Mixed Methods Training Program

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**Phase 1**

Qualitative Data Collection & Analysis

**Phase 2**

Quantitative Phase: instrument design, new variables, or intervention activities

Intent: To explore first before building into a quantitative phase

**Phase 3**

Quantitative Data Collection & Analysis

Interpretation
Intervention Mixed Methods

Implement qualitative elements before the experiment.  
- e.g., use the qualitative results to plan the trial

Implement qualitative elements during the experiment.  
- e.g., use the qualitative results to explain participants' experiences

Implement qualitative elements after the experiment.  
- e.g., use the qualitative results to explain the trial outcomes

Source: Gallo et al, Mixed Methods Training Program
Data Integration Challenge

◦ “What synergy is gained by the additional work of using both qualitative and quantitative data methods?”
◦ Carefully plan studies with intentional choices that can leverage integration
◦ Consider integration at multiple levels: theory, conceptual models, design, methods, analysis, interpretation, visualization, presentation, publication, and teams.

Table 2: Integration through Methods

<table>
<thead>
<tr>
<th>Approach</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecting</td>
<td>One database links to the other through sampling</td>
</tr>
<tr>
<td>Building</td>
<td>One database informs the data collection approach of the other</td>
</tr>
<tr>
<td>Merging</td>
<td>The two databases are brought together for analysis</td>
</tr>
<tr>
<td>Embedding</td>
<td>Data collection and analysis link at multiple points</td>
</tr>
</tbody>
</table>

Fetters et al 2013
Training Opportunities

- **UCSF Course: Qualitative and Mixed Methods Research**
  - Lead by Drs. Sara Ackerman & Kim Koester
  - [https://epibiostat.ucsf.edu/qualitative-and-mixed-methods-research](https://epibiostat.ucsf.edu/qualitative-and-mixed-methods-research)

- **Mixed Methods Research Training Program for the Health Sciences**
  - Faculty leaders: Drs. Joe Gallo, John Creswell, Charles Deutsch, & Tim Guetterman
  - Johns Hopkins SPH, funded by NIH, 3-day training program supplemented with other activities (e.g., consultations)
  - [https://www.jhsph.edu/academics/training-programs/mixed-methods-training-program-for-the-health-sciences/](https://www.jhsph.edu/academics/training-programs/mixed-methods-training-program-for-the-health-sciences/)

- **University of Michigan Mixed Methods Program**
  - Lead by: Drs. Michael Fetters, Tim Guetterman, & John Creswell
  - Online workshop: Advances in Mixed Methods Analysis & Integration; **February 24-26, 2021**
  - [http://www.mixedmethods.org/](http://www.mixedmethods.org/)
Key Resources


- Curry & Nunez-Smith 2017; Definition & Overview of Mixed Methods Designs; in Mixed Methods in Health Sciences Research: A Practical Primer


Other Resources:

- Journal of Mixed Methods Research - https://journals.sagepub.com/home/mmr
Journals Publishing Mixed Methods

- Journal of Mixed Methods Research (JMMRR)
- Health Services Research
- BMJ Open
- JMIR Research Protocols
- BMC Health Services Research
- BMC Public Health
- Etc.
Great Examples Published
