Combining Methods and Research Paradigms

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Lecture Overview

• Research Design
• Integrated or ‘mixed’ methods research paradigms and designs.
• Specific method connecting qualitative and quantitative data: Content Analysis
Definition: Research Design

Process of choosing a way to answer your research question, which requires knowing both what your options are and how to evaluate their relative strengths and weaknesses.
Why Research?

• To understand or ‘to know’
  “All men by nature desire to know” (Aristotle)

• To arbitrate between competing truth claims.

• To build broader theory

• To inform policy and practice
The Role of Methodology

• Research methods provide foundation for knowledge claims.
  – Research users can judge epistemic strength of knowledge claims on basis of methods used

• To justify claims to knowledge, you must describe details of sampling, data collection, variables, measurement tools, data analysis, etc.
Research Design: Getting Started

• Every successful research project requires two things:
  1. a meaningful research question
  2. an appropriate way to answer that question.
• Choosing an appropriate research design involves matching goals that motivate your research with methods for meeting those goals.
Research Design = Choices

• Research design all about making choices.

• To make a good choice, you need to know (1) what your options are and (2) how to evaluate those options.
Research Design: Getting Started

- Sometimes, your best choice will be a single research method.
- Other times, an integrated combination of methods will best serve your purposes.
- It is helpful to think of methods as tools that offer a set of strengths that can be used to accomplish range of goals.
Mixed Methods Research Design

• Methodological Eclecticism

• Motivations for Combining Research Methods

• Pragmatic Epistemology vs. Epistemological Fidelity
Methodological Eclecticism

• More methods = not necessarily better
• Alternative to mere eclecticism is having clear purposes for using multiple methods
• Requires understanding reasons why researchers choose to integrate methods.
Motivations for Combining Methods

**Brodest Purpose**
To combine the different strengths of different methods.

**Convergent Findings**
Uses different strengths using each method to investigate the same phenomenon and comparing the results.

- Qual = Quant

**Additional Coverage**
Uses different strengths by assigning each method a distinct set of purposes within the study as a whole.

- Qual + Quant
- qual + QUANT
- QUAL + quant

**Complementary Assistance**
Uses different strengths by connecting methods so that one contributes to the performance of another.

- Qual → Quant
- Quant → Qual
- qual → QUANT
- quant → QUAL
- QUANT → qual
- QUAL → quant
Motivations for Combining Methods

• *Convergent Findings*, which uses qualitative and quantitative methods to address the same research question.

• Most likely to rely on a Convergent Findings motivation when greater certainty needed.

• Certainty comes from showing methods with different strengths yield similar results.

• This motivation also known as triangulation or cross validation
Motivations for Combining Methods

- *Additional Coverage* motivation assigns different strengths of multiple methods to different goals within overall project.

- This approach relies on division of labour, matching each method’s strengths to separate goal within overall research project.
Motivations for Combining Methods

- **Connected Contributions** motivation links methods together so one method enhances effectiveness of another. (Morgan also calls this ‘Complementary Assistance’)

- Aim of linking is to use what you learn from one method to inform how you will use another method. (e.g. pilot focus groups used to design large-scale survey)
Combining Research Methods

• Decision to combine methods must start with consideration of how you can combine qualitative and quantitative methods to serve your research purposes.

• Epistemology is one of first potential issues
Epistemology: Consistency Optional?

• Mixed methods research typically follows overarching epistemological approach or ‘paradigm’ based on Pragmatism.

• Pragmatic paradigm seeks to minimize questions about nature of reality by concentrating on social action as basis for knowing.

• Seeks to replace questions about what is true with questions about what is useful.

• With regard to Research Design, Pragmatism concentrates on extent to which your research procedures serve your research purposes.
Pragmatic epistemology

• Pragmatism leads to what Patton (2002: 257) has called a “paradigm of choices” where you justify choices about research procedures based on their ability to meet overall project goals.

• Essentially, this approach to research design: “accepts that quantitative, qualitative, and mixed research are all superior under different circumstances and it is the researcher’s task to make the decision about which research approach [...] should be used in a specific study” (Johnson and Onwueguzie 2004: 22-23).
## Sequential Approach (Morgan)

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Supplement is:</th>
<th>Priority</th>
<th>Core Is:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Preliminary</td>
<td>Preliminary Qualitative Input</td>
<td>Quantitative</td>
</tr>
<tr>
<td></td>
<td>Follow-Up</td>
<td>Follow-up Qualitative Extension</td>
<td>Qualitative</td>
</tr>
</tbody>
</table>

- **Core Is: Quantitative**
  - Preliminary Qualitative Input: qual → QUANT
  - Follow-up Qualitative Extension: QUANT → qual

- **Core Is: Qualitative**
  - Preliminary Quantitative Input: quant → QUAL
  - Follow-up Quantitative Extension: QUAL → quant
Mixed Methods Research Design

Discuss in small groups how a mixed methods design might (or might not) benefit your research project (and why). 

*Be prepared to briefly summarise your discussion and raise any key issues that emerge.*
Qualitative Survey Items and Qual→Quant. In Survey Design and Analysis

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Using Qualitative Items in Surveys: Alternative Approaches to Impact Evaluation

• Thought-listing
• Drawings
• Concept Maps
Can collect **qualitative** data and convert to **quantitative** through **Content Analysis**

Method of transforming symbolic content of a document (such as words or images) from a qualitative unsystematic form into a quantitative systematic form.
Coding in Content Analysis

Categorizing raw data (behaviors or elements) into a limited number of standardized categories, suitable for analysis

You need to develop your own coding scheme that:

- May be based on existing coding schemes or on your orienting theories
- May emerge (inductively) from looking at the data
- Must be numerical in order to analyze it statistically (even where you are coding latent content)
- Must have categories that are:
  1. exhaustive
  2. mutually exclusive
  3. theoretically relevant
Strengths of Content Analysis

• Can repeat a portion of the analysis if necessary.
• Permits study of processes over time.
• *Inter-coder Reliability* can be calculated—offers assurance of consistent results over time (especially with manifest content).
Limitations of Content Analysis

• De-contextualises content by removing it from its original context.
• Gives impression of objectivity but ultimately relies upon readings of text from particular standpoints.
• Time consuming and requires careful planning and structure.
Case Example: Learning at the Zoo
Specific Research Questions

How and why is learning taking place within the zoo?

- Answering research questions required a mixed methods social scientific approach (both quantitative and qualitative).
Large-scale Pupil Survey: Research Question

Are there any differences in the impact of a zoo visit on a pupil if they have a tailored educational presentation by zoo staff compared to not having an education session (self-guided)?
Large-scale Pupil Survey: Mixed quantitative & qualitative approach

• Pre- and post-visit surveys completed the day before the zoo visit and the day after the zoo visit.

Sample size: $n = 3018$ respondents

• Multiple measures of learning about animals, habitats and conservation.
1. Thought-listing measure: ‘what do you think of when you think of a zoo?’ (x5)

2. Annotated drawing of ‘favourite wildlife habitat’ with all the plants and animals which live there
London Zoo Education – Pupil Evaluation Questionnaire (Primary)

Name: Ibra
Are you? Boy/Girl (Please circle) How old are you? 9 years

*Have you ever been to a zoo? YES ☐ NO ☐

*What do you think of when you think of ‘the zoo’? (write below):
1. I think it is fun
2. I think we can learn
3. Case I like animals
4. Seeing animals
5. Saving animals from extinction
6. Other reasons

*Zoos are for...
(tick all you agree with)
1. “Fun” ☐
2. “Learning about animals” ☐
3. “Seeing animals” ☐
4. “Saving animals from extinction” ☐
5. “Other reasons” ☐

*Have you had fun at the zoo today? YES ☐ NO ☐ NOT SURE ☐

*How was the London Zoo lesson today? (circle the face that shows how you feel)

*What do you think of when you think of ‘the zoo’? (write below):
1. I thought it was fun
2. It was amazing
3. and it was quite
disgusting
4. “Saving animals from extinction” ☐
5. “Other reasons” ☐

*Please draw your favourite wildlife habitat and all the plants and animals that live there.
(Please put names or labels on everything)

Example Habitats
Desert
Rainforest
Arctic
Forest

*What did you draw above?

I drew a rainforest with a spider monkey!
Annotated Diagrams of favourite habitat

Analysis of all paired forms – scoring on basis of 1-3
  1= negative change in accuracy of representation (animals/habitat)
  2= no change in accuracy
  3 = positive change
Annotated Diagrams of favourite habitat

Pre-session

On same measure, visits including education sessions showed almost double the increase in learning on this measure.
Case Example: Fitzwilliam Museum
The Family Outreach Visit

- Arrival and Greeting (15 min.)
- Gallery Visit (20 min.)
- Studio-based craft workshop (80 min.)
Results: Prior Museum Experience

• One respondent did have distinct memory of her childhood visit to the Fitzwilliam Museum:

Interviewer  Do you have any impression that you remember of the Museum from that?

Tina        Somebody kept saying, ‘behave’ and ‘be quiet’. [My impression was] ‘authority’ really. I don’t like authority.

Interview at Fitzwilliam Museum on Day of Visit - 9/2/10

• This negative memory can also be seen in Tina’s personal meaning map (next).
Pre-visit personal meaning map (Tina)

Fitzwilliam Museum
- Boredom
- Geeks
- Silence
- Being watched
- Judged
- Structure
- Rushing
- Rand
- Authority
- School
- Work
- History
- Children of school age or people interested in history
- Something for children of school age or people interested in history
- Something you can only see without getting bored
- Something everyone should visit and learn about
- Respect
Results: Attitude change (Tina)

• Pre-visit questionnaire, the ‘Fitzwilliam Museum’ was associated with “school work”, “not very child friendly due to lots of expensive, irreplaceable things” and “history”.

• Two weeks after visit, she listed just “educational” and “adaptable for all ages”.

• Tina’s shifting perceptions were also expressed in an interview after the gallery component of the family outreach visit (next)
Figure 17: 'Samantha' Personal Meaning Map (23.2.10)

- Fitzwilliam Museum
- Arts
- Pitchers
- Things that are old
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