ADVANCE QUALITATIVE RESEARCH METHODOLOGY WORKSHOP for CENTRE OF TEACHING AND LEARNING

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Strategies for analysing qualitative data

Workshop outline

- Principles of qualitative data analysis
- Try out two different ways of analysing data
- Report back
- Conclusions

Principles of qualitative data analysis

- All qualitative analysis involves:-
  - **Comprehending** the phenomenon under study
  - **Synthesising** a portrait of the phenomenon, showing links and relationships between aspects
  - **Theorising** about how and why these relationships appear as they do
  - **Recontextualising** – i.e. putting the new knowledge about the phenomenon into context established by others

Four different strategies

Grounded theory Constant comparative analysis, looking for patterns by comparing different pieces of data	**Narrative analysis** **Using the stories we tell to gather insights into experiences**
Phenomenology Uncovering underlying structures, focus on depth and detail	**Ethnography** Getting to know a culture, its beliefs and processes

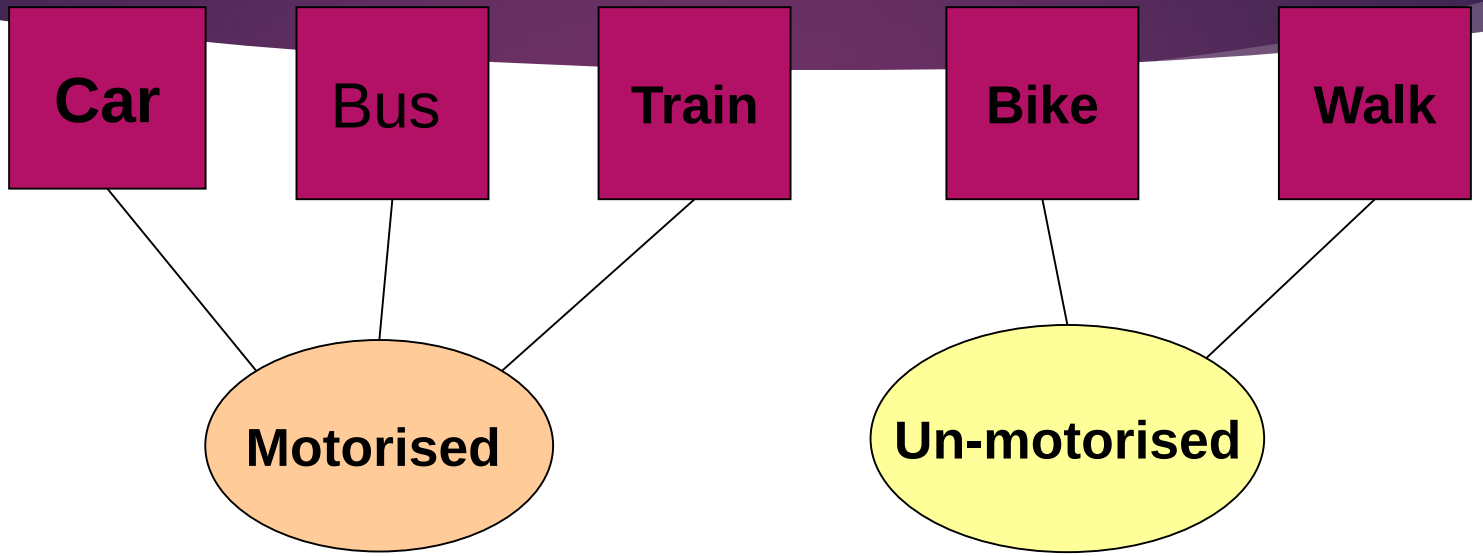
Same topic, different research questions

Grounded theory What influences pre-service teachers' experiences of teaching science?	**Narrative analysis** How do pre-service teachers experience teaching science?
Phenomenology What are pre-services teachers experiences of teaching science?	**Ethnography** How do pre-service teachers teach science in different contexts?

Grounded theory

- Proposed by Glaser and Strauss, 1967
  - A simplified model involves
    - Developing categories to illuminate data
    - "Saturate" the categories with lots of examples
      - This shows the categories are relevant and useful
    - Develop the categories into an analytical framework with relevance outside the research setting
    - Re-interpret the framework as a theory based on the data
      - Hence "grounded theory"

How do people travel to university?



General

Poor personal mobility is allied to motorised modes

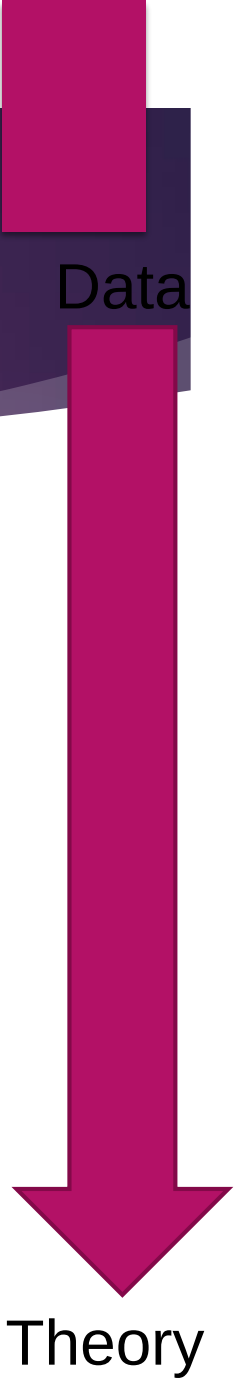
Distance influences transport mode decisions

Transport decisions are highly personalised

Conclusions

Grounded theory analysis

- Develop categories to illuminate the data
- "Saturate" the categories with more data
  - Find lots of examples from other data that fit the categories
  - Adjust categories if necessary
- Organise categories into an analytical framework
- Develop a theory



Advice:
"Rules" for coding data

1. Don't introduce pre-conceived ideas / bias
2. Coding data is an *iterative* process – going between theory, codes several times
3. Explanations come from careful reading of the data
4. Analysis and conclusions must be firmly rooted in the data

Preliminary steps

- Make back up copies of all original materials
- Give each respondent / source a unique code/ pseudonym for reference
- Keep data in common formats, e.g. same software package, same record cards, same size paper etc
- Collate data to allow space for researcher's notes, e.g. interview transcript on one side, space other side of page

Get familiar with your data

- Read and re-read data many times
  - One interview can take months to analyse!
  - Look for:-
    - Implied meanings (bearing in mind the rules)
    - What hasn't been said / stated
    - Links to field notes / other data
  - Try to see the data in context
    - Cross-reference to any field notes/ other data
    - E.g. circumstances surrounding an interview / when a questionnaire was completed

Research question

- **What influences pre-service teachers' experiences of teaching science?**

- Four interview transcripts – Daniel, Andrew, Jill, Valerie
- Four lesson observations

Task 1

- Use grounded theory principles to analyse the data
- Generate a theory that helps to answer the research question

Step 1: Interpret the data

- Decide on categories, devise codes
  - Code – attach tag or label to raw data
    - Name, initial, number
    - Use systematically
- Read more data, check the categories, adjust if necessary

A possible grid ….

Person	Category 1	2	3	4	Notes
Daniel					
Andrew					
Valerie					
Jill					

Step 2:

- Organise codes into themes, regroup data into a thematic chart

Thematic chart

Theme Person	Colleagues	Books	Assessment needs
David			
Jill			
Andrew			

Step 3: Reduce the data

- Look for consistent themes in the data that
  - Permit you to summarise lots of data succinctly
  - Give a good overview of the range of opinions
  - Link back to the raw data – evidence–based
  - Help answer the research question - lead to a theory

Feedback!

What did you find?

Grounded theory

Good points

- Creative activity of theory building based on empirical data
- Best used to construct ideas based on a model of social reality

- Doesn't acknowledge implicit theories that guide early work
- Categories can be like an "empty building"

Narrative analysis

- Recognises how stories we tell provide insights about our experiences

- Aims to show how people understand and make sense of their lives

Research question

- **How do pre-service teachers experience teaching science?**

Generating findings from narratives

- Description
  - What terms / phrases do the pre-service teachers use to describe their experiences?
- Explanation
  - What reasons can we suggest that explain these?
- Generalisation
  - Can we suggest a general theory supporting the data?

Description

- For each term/phrase, identify:-
  - Any background factors involved – age of students, examinations, subject specialism
  - Examples of responses – how frequently does this term/phrase occur?
  - The strength of opinion – how definite is the viewpoint/ idea / position?

Explanations

- These can be based on:-
  - reasons, motives, intentions
    - People vary in the extent of control they have
    - People use reasons as excuses
  - Beliefs and social behaviour
    - People follow written and unwritten "rules"
    - People can make choices
  - Explicit reasons - given by the participant
    - S/he says why they thought / did something
    - S/he explains in terms of factors involved

Generalisations- need care!

You can't:-

- generalise reliably beyond the context in which the data were collected
- give numbers / sense of numbers, e.g. "majority", "most"
- Make wild claims about the quality of your work

You can:-

- Make links to literature to show your findings replicate those of others
- Comment on typical features of your data
- Focus on the issue / problem, not prevalence

Example: Daniel

- Background factors tell us:-
  - Chemistry is his specialism
  - Biology and physics are “outside specialism”
  - He taught a range of classes in yr 7 – 11
- We can identify themes relating to:-
  - School documents (SoW)
  - Assessment (GCSE)
  - Other colleagues

Task 2

Carry out narrative analysis on Daniel, Jill, Valerie and Andrew's interviews

Feedback!

What did you find?

Reporting qualitative data (1)

Focus on the issue

- "The training was criticised because students felt they had not been given opportunities to develop new skills"

RATHER THAN

- "FIVE students criticised the training because they had not acquired new skills"

Reporting qualitative data (2)

Use a variety of phrases, e.g.

- "The training was repeatedly criticised because of …" RATHER THAN
  - "A majority said the training was poor because…"

- "An alternative, but less frequent view was…"

  RATHER THAN

  - "Less than 10% said…"

Reporting qualitative data (3)

- Minimise use of “some said”, e.g. by use of:-
  - A contrasting view expressed by those who….
  - People in favour of …. highlighted the need for ..
  - Four differing views on this were …..
  - Those opposing this indicated that ….

Reminders

- Take advantage of “naturally occurring” data
- Don’t treat a person’s point of view as an explanation
- Study inter-relationships
- Begin with “how” questions, then ask “why”