HEST 5001

Lecture 4: Research Methods and reliability / validity
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<td>Inferential statistics / descriptive statistics / content analysis / thematic analysis / discourse analysis / interpretive phenomenological analysis</td>
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(Dyson & Brown, 2006:3)
Methods

- Questionnaires
- Interviews
- Observation
- Documents
Questionnaire

Could be:
(i) Door-to-door
(ii) Postal
(iii) Site-based
(iv) Telephone
(v) Internet
Features of questionnaires

- Be designed to collect information which can be used subsequently as data for analysis
- Consist of a written list of questions
- Gather information by asking people directly
  - (Denscombe, 2007:153-154)
Questionnaires appropriate when:

- Large numbers or respondents in many locations
- Straightforward information, relatively brief and uncontroversial information is required
- *Social climate* is *open* enough to allow honest answers
- Standardized data from identical questions
- Respondents can be expected to read and understand the questions
Questionnaires appropriate when:

With postal questionnaires:

• Time allows for delay:
  Production, piloting, posting etc
• Resources for printing, postage and data preparation
Advantages of questionnaires

• Economical
• Easy to arrange (compared to interviews)
• Standardized answers; little scope for data to be affected by “interpersonal factors”
• Pre-coded answers
• Data accuracy, especially internet survey, or optically read
Disadvantages of questionnaires

• Pre-coded questions can be frustrating, and thus deter people from answering. May affect response rate!

• Pre-coded questions can bias the findings towards the researchers way of seeing things

• Questionnaires offer little / no opportunity to check the truthfulness of the response
Questionnaire design

Information
- Sponsor
- Purpose
- Instructions (return etc)
- Confidentiality
- Voluntary
- Thanks

Instructions
- Example
- Specific instructions (e.g. tick box / circle answer)
Questionnaire design (2)

- Keep the questionnaire as short as possible
- Wording of questionnaires is one of the most difficult features of questionnaire design – also the most important to get right!
<table>
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<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<tbody>
<tr>
<td>Wide coverage</td>
<td>Poor response rate</td>
</tr>
<tr>
<td>Cheap</td>
<td>Incomplete or poorly completed answers</td>
</tr>
<tr>
<td>Pre-coded data</td>
<td>Limit and shape nature of answers</td>
</tr>
<tr>
<td>Eliminate effect of personal interaction with researcher</td>
<td>Cannot check truth of answers</td>
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</table>
References: Questionnaire-Survey


Methods

- Questionnaires
- Interviews
- Observation
- Documents
Features of interviews

- There is consent to take part, (not done in secret)
- Words are “on the record”
- Agenda set by researcher
  - (Denscombe, 2007:173-174)
Interviews appropriate when:

- Opinions, feelings, emotions and experiences
- Sensitive issues
- Privileged information

Pragmatic considerations:

- Direct access to participants
- Viability (cost travelling time)
Types of interviews

- Structured interviews
- Semi-structured
- Unstructured
- One-to-one (individual)
- Group interviews
- Focus group
Skills for interviewing

• Attentive
• Sensitive to participant
• Tolerate silences
• Able to use prompts
• Good at using probes
• Good at using checks
• Non-judgemental
• Facilitating focus groups – allow equal say!
Recording interviews

- Field notes
- Audio recording
Advantages of interviews

- Depth of information
- Insights
- Equipment
- Participants’ priorities
- Flexibility
- High response rate
- Validity (direct contact with participants)
- Therapeutic for participants
Disadvantages of interviews

- Time consuming
- Data analysis
- Reliability
- Interviewer effect
- Inhibitions
- Invasion of privacy
- Resource intensive
References: unstructured interviews


- Culley, L (2001) Caribbean Nurses and Racism in the NHS In Culley, L and Dyson, SM (Eds) *Ethnicity and Nursing Practice* Basingstoke: Palgrave
Methods

- Questionnaires
- Interviews
- Observation
- Documents
Types of observation

- Direct observation
- Participant observation
Advantages of observation

- Direct data collection
- Systematic and rigorous
- Efficient
- Pre-coded data
- Reliable
Disadvantages of observation

- Behaviour not intentions
- Systematic and rigorous
- Efficient
- Pre-coded data
- Reliable
References: Observation

- Davis, A (1982) *Children in Clinics*

- Strong, P (1979) *The Ceremonial Order of the Clinic*

- Bowler, I (1993) Study of Midwives

- Dyson *et al* (2007) Do midwives ask or assign ethnicity at ante-natal screening clinic?
Participant observation

“By participant observation we mean the method in which the observer participates in the daily life of the people under study, either openly in the role of the researcher or covertly in some disguised role, observing things that happen, listening to what is said, and questioning people, over some length of time”

(Becker & Green, 1957: 28), cited in Denscombe
Advantages of participant observation

• Basic equipment (self)
• Non-interference
• Insights
• Ecological validity
• Holistic
• Participants’ point of view
Disadvantages of participant observation

- Access
- Commitment (demanding method)
- Danger
- Reliability (dependence on self)
- Representativeness of the data
- Deception
Participant Observation

- To avoid changing what people do by joining in their activities to a certain extent whilst still observing them

- By participating to increase the possibility of accurately describing
References: Participant Observation

- Jeffery, R (1979) Accident & Emergency
- Paterson, E (1984) Hospital kitchen maids
- James, V (1984) “A postscript to Nursing” Palliative care
Documents

- Government publications and official statistics
- Newspapers and magazines
- Records of meetings
- Letters and memos
- Diaries
- Website pages and the internet
Official Statistics/Documents

- Secondary Sources: exist prior to, and for reasons other than, the research
Official Statistics/Documents

- May be only available source of data
- Readily available (time and money)
- Trends over time (rates of disease and level of deprivation)
- Comparisons between different groups, different societies, historical comparisons
- Before and after (legislation)

- Collected with a completely different purpose in mind
- Categories may not be comparable
- Categories may reflect politics of society
- Three stages removed: how accurately do they reflect events?
References: Official Statistics


- Durkheim, E (1970 [1897]) *Suicide* Routledge & Kegan Paul
References: Documents

- Plummer, K (2001) *Documents of Life*
- See content analysis reading list
### Philosophies / Paradigms / Dilemmas
- Positivism / Subjectivism / Critical realism / Postmodernism

### Methodological Criteria
- Internal validity / External validity / Reliability

### Research Strategies / Designs
- Experiments / Surveys / Action research / case studies / ethnography / grounded theory / phenomenology / mixed methods

### Research Methods
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### Data Analysis
- Inferential statistics / descriptive statistics / content analysis / thematic analysis / discourse analysis / interpretive phenomenological analysis

(Dyson & Brown, 2006:3)
Measuring Brains
Methodological Criteria

- Validity: are we measuring what we claim to measure; describing what we claim to describe?

- Reliability: to what extent can the research be repeated (by another researcher and/or at a different time) and the same result found?

- Generalizability (External validity): to what extent can we generalize our findings beyond the immediate sample?
Invalid
Unreliable
Internal validity and reliability

- Stopped
- Valid (twice a day) but not reliable
Internal validity and reliability

- Ten minutes slow
- Reliable (but reliably wrong, never valid)
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<tr>
<td>Internal validity*</td>
<td>Phrase concepts in terms that can be observed and measured in order to hypothesize about causal relationships between variables</td>
<td>Descriptions of how social life is “achieved”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Understand meanings of social world</td>
</tr>
<tr>
<td>Reliability*</td>
<td>Imposing structure / control on social world – reduce variability</td>
<td>Understand that the production of knowledge, and the effects of the researcher</td>
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<tr>
<td>Generalizability*</td>
<td>Sampling population to make statistical claims</td>
<td>Small world research. Generating, rather than testing theory</td>
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*denotes items usually part of the Positivist paradigm

From Dyson & Brown, 2006: 30

- **Internal validity**, which Lincoln and Guba translate as truth value, is replaced by the concept of **credibility** – whether or not the participants studied find the account true.

- **External validity**, or the extent to which findings are more generally applicable, is replaced by **fittingness** or **transferability**, which is based on the idea that accounts may be transferable to other specified settings through the provision of thick description about both the sending and the receiving contexts.

- **Reliability**, or the consistency of findings, is replaced by the notion of **dependability**, which is achieved through an auditing process called an ‘audit trail’, in which the researcher documents methods and decisions, and assesses the effects of research strategies, rather than being concerned about replication.

- **Objectivity**, or a concern with neutrality, is replaced by **confirmability** – the extent to which findings are qualitatively confirmable through the analysis being grounded in the data and through examination of the ‘audit trail’.
Types of Validity 1

- **Conclusion validity** The degree to which the conclusions reached by researchers about the relationships between variables within their data are reasonable.

- **Consequential validity** The degree to which the results are commensurate with the purposes to which the results were supposed to be applied.

- **Construct validity** The degree to which conclusions can legitimately be made from the indicators of the study to the theoretical concepts that those indicators are held to represent.
Types of Validity 2

- **Content validity** The extent to which the research concepts or measures incorporate all aspects that should be included and none that should not be included.

- **Convergent validity** The degree to which concepts that should in theory be closely associated are actually observed to be closely associated.

- **Criterion validity** The degree to which a research concept accurately reflects relevant criteria external to the original context of the research.
Types of Validity 3

- **Ecological validity**
  The extent to which results can be applied back to a context where the research has been disembedded from the context.
Types of Validity 4

- **External validity** The extent to which the results of the study can be statistically generalized beyond the context of the original study.

- **Face validity** The extent to which the measurement indicator ‘looks right’ or is intuitively appealing to the user or research participant. This kind of validity is treated sceptically by many researchers.
Types of Validity 5

- **Sample orientated validity** Concerned with types of validity that relate to whether ideas are appropriately grouped together.

- **Sign orientated validity** Concerned with types of validity that relate to whether proxy indicators are a good representation of a theoretical construct.

- **Statistical conclusion validity** The degree to which conclusions, based on your statistical choices of sample size and significance level set, are correct.
Types of Validity 6

- **Catalytic validity**

Catalytic validity points to the degree to which research moves those it studies to understand the world and the way it is shaped in order for them to transform it. ............Research that possesses catalytic validity will not only display the reality-altering impact of the inquiry process, it will direct this impact so that those under study will gain self-understanding and self-direction.'

(Kincheloe & McLaren, 2000: 297)
Reliability

- **Temporal stability** Under this criterion, a test is reliable if the same form of a test on given on two or more separate occasions to the same group of participants yields the same result. Repeated measurements may require costly and time consuming visits to field settings, where it may not be easy to locate the original respondents anyway. Repeated testing is also likely to change the participants.

- **Form equivalence** This is based on the idea that two or more different forms of test, based on the same content can be used.

- **Internal consistency** This relates to tests, measures and questionnaires with large number of items. We can correlate the items together in various ways so as to see whether they are related. This principle underlies measures of internal reliability such as Cronbach’s Alpha, or Spilt-half.
Internal Validity

- Are we measuring what we claim to measure, describing what we claim to describe?
Official statistics / Documents

Social surveys

Questionnaires

Structured interviews

In-depth interviews

Direct observation

Participant observation

Numbers

Low

Personal Involvement

High
Internal Validity

Number of logical stages removed

3 Documents
2 Accounts
1 Observation

What is Happening?

Official Stats
Questionnaires
Interviews
Internal Validity

What is Happening?

- Number of logical stages removed
- What you interpret what other people say about what people say they are doing
- What you interpret what people say they are doing
- What you interpret people as doing
- What people do

3 Documents
2 Accounts
1 Observation