CARDIFF UNIVERSITY

PRIFYSGOL CAERDYDD

how to:

Wales **Deanery Deoniaeth** Cymru

Medical Education @ Cardiff, 2017

Category: **Research**

Analyse Qualitative Data

Susan Jamieson

Qualitative research is concerned with exploring phenomena and understanding social situations. Growing interest in medical education research has led to a greater appreciation that qualitative methodologies (approaches) and methods (techniques) are a legitimate means of answering research questions of relevance to the medical profession. However, there is a certain mystique about how to analyse qualitative data. This brief article aims to shed some light on the process, but for a fuller account see Jamieson.[1]

Alternative approaches and methods for analysing qualitative data

The approach and method used for analysing qualitative data should relate to your purpose in collecting the data, which in turn relates back to your research question(s). **See Figure 1**.

How to undertake thematic analysis

Newcomers to qualitative research are likely to undertake small-scale exploratory studies that require an inductive approach; accordingly, this article focuses on how to carry out thematic analysis, as described below.

1: Data preparation

Preparation may include, word-processing hand-written data, transcribing audio-recordings into text format, formatting data, editing data, anonymising data, uploading data to specialist software. Word-processing your own data is encouraged because it is one means of immersing yourself in it, but this can be extremely time-consuming. Using data analysis software such as NVIVO, may be used and requires the uploading of prepared transcripts.
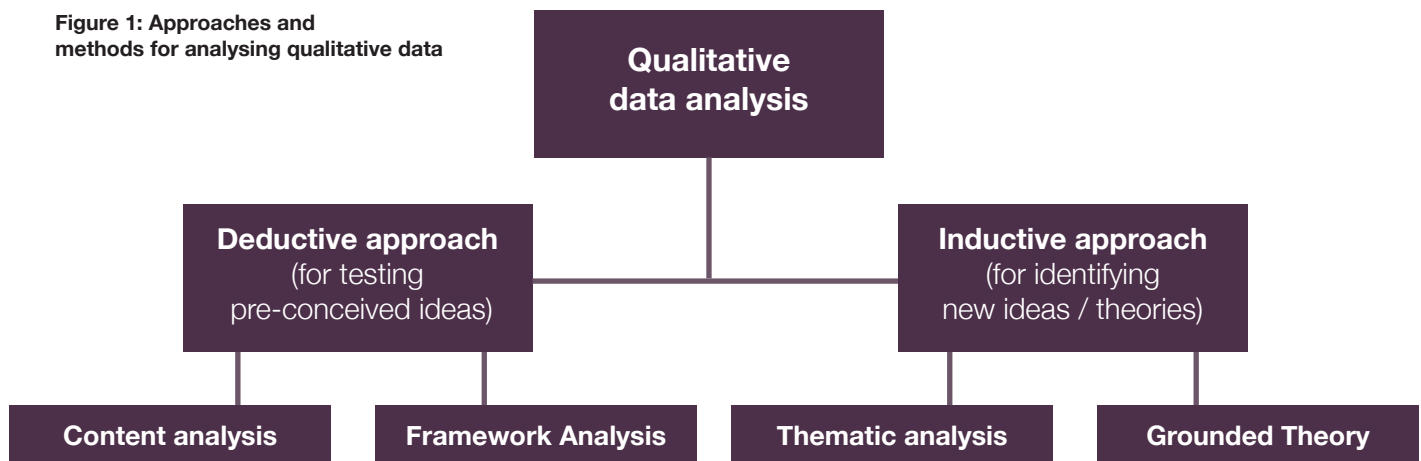
2: Immersion in the data

Immersion means you become very familiar with the data. You should form a general impression of themes, or ideas, suggested by the data. These may relate to themes in the literature, or to your previous research or experience, although to avoid introducing bias you should be receptive to ideas that contradict/challenge your expectations. You will likely see novel themes 'emerging'. You should begin analysing initial transcripts before you have finished collecting all the data, so for later transcripts you will search for themes that emerged from early transcripts.

3: Coding

Coding is where you highlight or otherwise label text that you interpret as having a particular meaning. The text, or 'unit of analysis', may be a word, phrase, sentence or paragraph: you should code what makes sense in relation to your research question(s). The given label is called a code and you will relate it to a particular theme (sometimes called a category). Ryan and Bernard[2] offer excellent suggestions for identifying themes (and hence related codes). Where new themes are identified in later transcripts, you should re-code initial

Figure 1: Approaches and methods for analysing qualitative data

transcripts for any evidence of these additional themes: this is called 'constant comparison'. Ultimately, you will end up with a final list of codes and themes: your coding scheme. NVIVO may be useful for marking up and organising data, and recording the rationale for coding decisions; but you could equally use Microsoft Word. You may also capture the rationale for coding decisions by 'memo'ing': namely, making brief notes about your thought processes.

4: Generation of themes

Here, you are aiming for data reduction. You organise codes into themes, then analyse the data at a deeper level, looking for patterns and relationships between themes, and interpreting the data in relation to the literature.

5: Abstraction/generation of theory

Finally, you may achieve further abstraction through synthesis of your findings; or you generate new theory, although this is particular to a Grounded Theory approach.

Establishing trustworthiness (rigour) in thematic analysis

For a small-scale, exploratory study using thematic analysis, you must demonstrate the credibility, dependability and transferability of your findings[3]. Credibility is the qualitative researcher's equivalent of internal validity (see Table 1), and may be achieved by the process of 'member-checking', whereby participants confirm the authenticity of transcriptions and/or derived themes. Alternatively, in peer review, coding decisions may be justified to experienced researchers. Dependability is similar to reliability and may be demonstrated, e.g., by reflexivity, which is being explicit about your impact on the research, and vice versa.

The contextual, often small-scale nature of qualitative research means that findings cannot be generalised. However, they may be transferable to other contexts. This is ultimately for the reader to decide, but your role is to provide clear descriptions of your methodology and your coding decisions; the latter supported, for example, by memo'ing. For further guidance, watch Gibb's excellent YouTube Videos (see Resource Box). Ideally, you will now feel encouraged to use thematic analysis with your own data!

Resource box

YouTube videos

Gibbs, G (2010). Bryman's 4 stages. Part 1.
University of Huddersfield.
https://www.youtube.com/watch?v=7X7VuQxPfpk

Gibbs, G (2010). Thematic coding, Part 2.
University of Huddersfield.
https://www.youtube.com/watch?v=B_YXR9kp1_o

Gibbs, G (2010). What can codes be used for? Part 3.
University of Huddersfield.
https://www.youtube.com/watch?v=3oo8ZcBJIEY

Gibbs, G (2010). What can coding be about? Part 4.
University of Huddersfield.
https://www.youtube.com/watch?v=5xM-9yuBhMc

Gibbs, G (2010). Code list and code hierarchy. Part 5.
University of Huddersfield.
https://www.youtube.com/watch?v=DVpkuTdkZvA

Table 1. Establishing Rigour in thematic analysis

Aspect of trustworthiness	'Quantitative equivalent'	Mechanisms for establishing this aspect in thematic analysis
Credibility	Internal validity	Member-checking; peer review
Dependability	Reliability	Interview schedule; examples of codes; reflexivity
Transferability	Generalisability	Description of methodology; memo'ing; audit trail

Further Information

1. **Jamieson S.** 2016. Analyse qualitative data. *Education for Primary Care*, 27(5), pp.398-402.
2. **Ryan GW, Bernard HR.** 2003. Techniques to identify themes. *Field Methods*.;15:85-109.
3. **Ruona WE. 2005.** *Research in organizations: Foundations and methods of inquiry.* California: Berrett-Koehler Publishers; Chapter 14, Analyzing qualitative data; p.223-263.

Interested in learning more about this and other educational topics? Why not professionalise your role with an academic qualification at PGCert, Dip or MSc in Medical Education via e-learning or attendance courses.
Contact: **medicaleducation@cardiff.ac.uk**
https://meded.walesdeanery.org/meded-courses

Dr Susan Jamieson – Senior Lecturer in Health Professions Education; School of Medicine, Dentistry & Nursing; University of Glasgow.

Series Editor
Dr Michal Tombs – Senior Lecturer in Medical Education, Postgraduate Medical & Dental Education (PGMDE), Wales Deanery, Cardiff University.