Teaching the analysis of big qual data

The sharing and re-use of data is priority for funding councils and this has recently led to initiatives in the world of qualitative data. NCRM researchers Lynn Jamieson, Ros Edwards, Susie Weller and Emma Davidson have been developing a new Breadth-and-Depth Method for big qual analysis[1]. Sarah Lewthwaite and Melanie Nind have been working with them to consider the practical challenges of teaching and learning a method like this that is so new. Through a series of cycles of discussion, teaching, reflection and revision[2], the combined team have developed some guidance for teaching this method. If you teach secondary qualitative data analysis or a related method you might find some of the guidance useful to your own context.

1. Using metaphor to communicate method

It is evident from the *Pedagogy of Methodological Learning* study that students of social science research methods regularly employ metaphor as part of their journey to coming to understand a method. We also know from analysis of research methods textbooks that teachers often rely on metaphor to communicate a method[3]. Metaphors can be a cognitive means of making sense of things that are novel or abstract - a 'common instrument of human cognition'[4]. In the Breadth-and-Depth Method metaphor was important to the researchers developing the method in their early communications about it with each other; the same metaphor later became a useful structure for sequencing the teaching.

The method comprises an iterative four-step approach, combining computational techniques for exploring the breadth of large datasets and more conventional qualitative approaches focusing on depth. Archived qualitative data is overviewed and a dataset assembled ready for thematic mapping using word analysis software to identify potential areas of conceptual and substantive interest. Preliminary analysis of short extracts follows to sample for usefulness and salience before in-depth qualitative analysis using more conventional approaches. An archaeological metaphor helps to communicate this better:

1. Aerial survey - Overviewing archived qualitative data and constructing a data assemblage becomes
2. Geophysical survey - Recursive surface thematic mapping to identify potential areas of conceptual and substantive interest
3. Test pit sampling - Preliminary analysis of short extracts, sampling for usefulness and salience;
4. Deep excavation - In-depth qualitative analysis.

The metaphor is important for showing how the stages are sequential but also part of a whole and in reconciling breadth with depth. It can be extended with talk of descending from the aerial to the ground and with getting to know the big data landscape. Teaching exercises can then enable students to metaphorically get their hands dirty as they navigate within and between stages.

2. Keeping the holistic quality of the method

Breaking a research method down into its constituent parts or sequence of stages is often a necessary part of teaching that method. It can also assist in division of labour for team-teaching. More importantly, this is helpful in preventing the method learning feeling overwhelming or out of control. However, the developers of the Breadth-and-Depth Method are clear that they have devised a whole method and an overarching commitment to the method as a whole is needed. Without this there may be a collection of several methods, but they are for different purposes. Teachers of mixed methods similarly grapple with how to support students to maintain their sense of the whole when methods rely on combination. Without the holistic view of the method, the scale of big qualitative data can mean that the qualitative imagination and distinct methodological mindset are lost. To this end it is also necessary to maintain the purpose of the method. The developers of the Breadth and Depth Method maintain a focus on the research motive and line questioning - a given 'point of view'. This reject notions of 'fishing' in the data. Teaching the Breadth-and-Depth Method involves conveying the logic of the method as a whole and to a particular purpose. It is this logic and purpose that enables students of the method to navigate the process themselves, and engage in effective decision-making as they move back and forth between levels of engagement with their data – from top-level surveying, through sampling and excavating steps.

To maintain holistic understanding, consider:

- Using worked examples and research papers to demonstrate the method in its entirety

- Identifying opportunities for 'back and forth' across stages of teaching

- Using Q&A at intervals to check understanding and engage peer-expertise

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3. Integrate practical and conceptual content

In short courses, we often aim to provide learners with a theoretically-informed and technical frame within which they can develop their skills. For secondary data analysis this involves connecting with and making use of archives, and applying analytic software to specific methodological ends. Blending technical and conceptual content is important here.

Modelling the method

Technical aspects of big qual analysis frequently require active learning approaches alongside strategies of modelling and exposition. When introducing archives, the use of onscreen demonstrations, show and tell, or 'walk-through' can usefully connect learners to the archive, prior to active learning such as undertaking browsing or experimental searching. Teachers can model an action, prior to learners replicating that action, and then expanding that activity through actions that engage their own research interests. 'Think aloud' is an important pedagogical tactic in a computer lab setting. Here, a researcher demonstrates actions, whilst voicing their intentions, decision-making and relating this to alternative scenarios. This raises student attention from the purely technical to make explicit otherwise implicit methodological logic.

Consider:

- Modelling the method, to show how it's done, the processes involved and what the end point might look like, as well as using 'think aloud' to convey the logic of the method.

- Using talks from experienced researchers to give backstage accounts of the reality of the method in practice

- Using live code, software and data quirks and glitches to demonstrate difficulty and model effective responses.

Engaging standpoints and reflexivity

At the same time, it is important to promote learners' reflection upon ethical and critical issues. Strategies and tactics for engaging reflexivity include using starting points that engage multiple perspectives and learners' research standpoints. These stress positionality and the ethical dimensions of working with archives. In this approach, the necessary formal procedures involved in accessing archived data offer a teachable moment. We

can scrutinise and discuss confidentiality, privacy and the ethics of using archives, the nature of archiving and methodological approaches to data (e.g. commitment to 'research with a purpose' rather than 'fishing' in the data). Archives are not designed for teaching purposes and we can highlight the meta-learning opportunity represented by archives as an insight into a multitude of research situations. When teaching moves to the use of software, including of the merits and challenges of different types of software for conducting secondary analysis, learners appreciate discussion of more critical notions such as the ethics of licenced and open software alongside discussion of functionality.

Consider:

- Using formal procedures as a springboard for critical discussions

- Incorporating different perspectives into discussions of technical and procedural activities.

Useful links

Big Qual Analysis Resource Hub http://bigqlr.ncrm.ac.uk/

NCRM Online resource: Teaching Big Qual http://ncrm.ac.uk/resources/online/teaching_big_qual

The Pedagogy of Methodological Learning Study: http://pedagogy.ncrm.ac.uk

Timescapes Archive https://timescapes-archive.leeds.ac.uk/

UK Data Service https://www.ukdataservice.ac.uk/

References

1. Davidson, E., Edwards, R. Jamieson, L. & Weller, S. (2019) Big data, qualitative style: a breadth-and-depth method for working with large amounts of secondary qualitative data, Quality & Quantity, 53(1), 363-376.

2. Lewthwaite, S., Weller, S., Jamieson, L., Edwards, R. & Nind, M. (2019) Developing pedagogy for Big Qual Methods: Teaching how to analyse large volumes of secondary qualitative data, NCRM Working Paper.

3 Lewthwaite, S. & Holmes, M. M. (2018) The Pedagogy of Social Science Research Methods Textbooks. Society for Research in Higher Education. London. https://www.srhe.ac.uk/downloads/reports-2016/Sarah-Lewthwaite-The-Pedagogy-of-Social-Science.pdf

4 Puschmann, C., & Burgess, J. (2014). Metaphors of big data, International Journal of Communication, 8, 1690–1709.

This guide is part of a series produced as part of research for the Big Qual Analysis: Innovation in Method and Pedagogy project. Look out for them on the NCRM website. We appreciate feedback to inform future work.