

Top Tips on Analysing Data and Presenting Findings for Your Education Research Project

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Tip 1: Answer your research questions

The aim of your analysis of data collected during your investigation is to answer your research questions (or to meet the objectives of your research if this is what you have preferred). Always examine your data with this in mind.

If some data do not help you to answer these questions, you do not need to use these in your study. If data you have collected help you address one or more of your research questions, analyse them closely to get full benefit from what you have found out. See Chapter 11 in *A Beginner's Guide...* for examples of how to do this with both qualitative and quantitative data.

Tip 2: Know your data

For close and detailed analysis, you need to 'know your data' well. There are several ways you can achieve this, for example:

- Listen several times to any voice-recorded data from interviews. Type out the text word for word. You will then be able to analyse this written transcript.
- Type out questionnaire responses, listing them under each questionnaire question
- Do a range of calculations with your quantitative data, counting and comparing the data in various ways (see *A Beginner's Guide...*, p.163)

- As you handle your data, think carefully about what the information is telling you. How might the data you have collected be understood or interpreted? What themes, ideas or conclusions can be drawn?
- Note down such thoughts as they occur, relating them to your research questions or objectives as you do so (see Tip 1). You could use your 'research log' for this – see *A Beginner's Guide...*, pp.35-36.

Tip 3: Describe your methods of analysis in your methodology section

The methodology section of your project is where you explain the methods you used to carry out your investigation and why you chose them. It is also worthwhile in this section indicating how you analysed the data you collected. You could even include an example of the analysis in an appendix. Note here how Suki writes in this way:

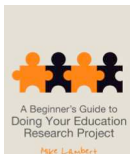
“The ‘coding’ of qualitative data has been defined by Smith (2012: 46) as the process of separating out ideas, so that themes or perspectives relevant to the research questions can be identified. This approach was used to analyse data collected for this study. Interview and observation records were examined closely and the main themes or ‘categories’, evident in the data, were listed. Each was also given a title, as suggested by Brown (2010). As these accumulated, they were then separated further into more specific ‘sub-categories’, each reflecting different aspects of the main themes, and a short name was again given to each. Finally, examples of data (quotations from interviews and events recorded during observation) which summarized or illustrated each category and sub-category were chosen and included when presenting data in the study. This same coding system was used with all of the qualitative data, so that an integrated overall picture could be produced. An example of interview text analysed in this way is shown in Appendix D.”

[References are imaginary]

Tip 4: Justify methods of analysis by using literature on doing research

When you explain how you analysed your data (see Tip 3), remember to justify your decisions by drawing on the literature about how to do research and on other research studies which you have examined. Suki drew on Smith (2012) and Brown (2010) to support and explain her chosen approach. Note how Jan does something similar here in relation to his analysis of quantitative data:

“Participants’ responses to closed statements in the questionnaire (‘Strongly agree’, ‘Agree’, etc.) were recorded on a tally chart, as suggested by Green (2013). This allowed the frequencies of particular responses to be counted against each statement in turn. By comparing these, it was possible to calculate



the extent of similarity and disagreement for each statement, as was done in similar research by Jones (2009). Looking at the chart as a whole meant that conclusions could be drawn about the range and relative strength of perspectives offered by participants against each of the study's research questions. This matched the recommendation given by Singh (2012: 32) that 'data should be used to address the stated aims of the investigation'."

[References are imaginary]

Tip 5: Ways of structuring data analysis and presentation of findings

There are various ways of presenting data and findings in your written project. Here are two:

1. First present data from each source in turn. For example, explain the data from your questionnaires in one section, followed by data from interviews in the next. Then combine or 'integrate' what you have discovered in a 'Discussion' section, using findings from all your data to address each research question in turn.
2. Using each research question as a subtitle from the start, present data from all your sources to address each question in turn. Then discuss and summarise what you have found out in a 'Conclusion' section.

Tip 6: Build a full picture

As you examine your data, look out for similarities or differences between findings from different sets of data. For instance, how do outcomes from your interview data match or contradict those from observations? You can then use this understanding to help you build a full and intricate picture of the issues raised in your research questions.

Note how Nick did this in *A Beginner's Guide...*, p.172, also how Jemima summarises findings from her investigation into views on the use of calculators in mathematics here:

"Parents expressed a range of perspectives in their questionnaires about the use of calculators to help children's understanding in mathematics, including doubts about its value. The interviewed teachers, however, showed much greater agreement about the benefits of this kind of learning. Overall, the data showed a professional belief in the usefulness of calculators, but parental concerns may need to be addressed if the school wishes to reach shared understanding on this issue."

Tip 7: Use tables to present data and findings

A 'table' has columns of numbers or text, and can help you to show data (usually quantitative data) from your investigation clearly and concisely. There are examples in *A Beginner's Guide...*, Chapter 11, also a list of the different kinds you might use (p.183).

Here are a few rules to follow if you include tables in your written project:

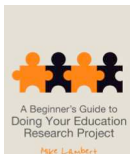
- Explain in your text what your table says about your data. Do not expect your reader to understand and interpret the table without this help.
- Use tables only if they are necessary for understanding your data. If data can be explained simply and easily in your text, then providing tables as well will only clutter up your writing unnecessarily.
- Number your tables, then refer to them by these numbers in your text. For example: 'Table 4 shows...' or '...(see Table 7)'. Also include a title underneath each table which explains what it is about, for example: 'Table 5: Students' evaluation of the value of homework'. You may be required to provide a list of tables, with number, title and page number, at the start of your written project.

Tip 8: Use figures to present data and findings

A 'table' has columns of numbers or text and can be useful for presenting mainly quantitative data (see Tip 7). A 'figure' on the other hand shows a picture, diagram, drawing or photograph. Again this can be useful, for example when presenting ideas which have emerged from your analysis of qualitative data, and the possible relationships between these ideas. The approach of 'grounded theory' (see *A Beginner's Guide...*, p.16) often leads to this kind of configuration – if you search for images of 'grounded theory' on the Internet, you will find a wide range of often complicated diagrams produced as a result of such research. Here is how Chris describes a figure he has produced as a result of his investigation into classroom management:

“Figure 3 shows the five elements identified by interviewees as the main aspects of successful classroom management, as described in the analysis. Lines connecting these represent the links which interviewees perceived between these elements. A bold line indicates strong or very frequent evidence of a link in the data; an ordinary line indicates occasional evidence; a dotted line indicates weak or very infrequent evidence.”

The advice in relation to presentation of tables in your written project, given in Tip 7, applies also to use of such figures.



Tip 9: Discuss findings in relation to ideas in your literature review

When you discuss your findings, relate what you have found out back to the ideas which you discussed in your literature review and the literature you examined there. The purpose of this is to produce an updated picture of the issues you have investigated, adding what you discovered from your own investigation to what you showed in your review was already known, perceived or understood elsewhere.

Here are some elements which you could highlight in this way:

- Aspects of your findings which match those you examined in your literature review
- Aspects which are different to these ideas
- Findings from your investigation which fill gaps which you noted in the literature and research you examined
- Findings which were absent, unclear or confused in the literature and remain so after your investigation.

As you do this, remember that your reader is mainly interested in what you have discovered from your own data. Therefore, do not overdo these links back to literature. Analyse and present your own data strongly, clearly and in detail before you make these connections.

See also: *A Beginner's Guide...*, p.175.

Tip 10: Evaluate your methods of analysis

Near the end of your written project, include some concise discussion of the methods of analysis you used in your project. You could consider:

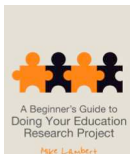
- Strengths of your data analysis – what worked well
- Obstacles you faced in this process, and the extent to which you felt you were able to address these obstacles
- Ways in which weaknesses in data analysis could be strengthened if your investigation was done again
- How your experiences of data analysis might inform other researchers doing similar research in the future.

Good luck with your project!

More Top Tips on all aspects of your research project:

<https://wlv.academia.edu/MikeLambert>

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