Introduction

Behind almost every life-changing decision about our society and environment, there is research. From improving health and life expectancy to planning better cities, fuelling business innovation or preserving the natural world, research helps ensure the big decisions we make are the right ones.

Quantitative research can produce statistics which, if done rigorously, can be generalized and provides us with trends in a population. It can also lead to causal explanations of phenomenon. However, it is not very good at answering why a trend is occurring or how does x lead to y.

Qualitative research uses interviews, observations, documentation and a range of non-numerical data to capture the context of a phenomenon. It can start to answer the 'why' and 'how' questions, and give better in-depth insight about a particular social context. However, it's less commonly used to generalize wider populations.

Mixed methods research is a third way.

What are mixed methods and why use this approach?

Mixed methods includes the benefits of both qualitative and quantitative approaches. There is not one mixed methods approach but a number of research designs that incorporate mixed methods.

Below are three basic mixed methods designs: (Cresswell, 2014)

- A convergent design – gathering qualitative and quantitative data and merging the two databases in order to compare the results from both databases
- An explanatory sequential design – where we start with quantitative data collection and analyze them and then follow up with qualitative data collection and analysis which explain the quantitative results
- An exploratory sequential design – where we start with qualitative data collection and analysis and then follow up by developing something that is to be used in a quantitative study – e.g. such as a series of closed ended questions for a survey, or the development of an instrument such as an attitude scale that is to be used with a particular population.

There are also more complex mixed methods designs, but the above are the basic ones.
In the last decade, mixed methods procedures have been developed and refined to suit a wide variety of research purposes. First gaining traction in the social sciences, this type of research is now expanding into other fields such as public health, medicine, psychology and community engagement. It is also becoming popular with business and marketing researchers, who have realized its potential for analyzing shifting customer, market and employee attitudes. Many researchers believe there are several benefits to mixed methods research, including:

• Clearer results by uncovering contradictions between quantitative and qualitative findings
• A more accurate reflection of study participants’ point of views by ensuring that the findings are grounded in participants’ experiences
• Increased flexibility through adaptability to different study structures, allowing more data to be uncovered versus using one method alone

Explore convergent designs

A survey with open and closed-ended questions is the simplest type of convergent design.

If a survey has closed-ended questions such as multiple choice or true/false answers, they will be imported into NVivo as classifying or attribute information. To analyze it more effectively, researchers can then compare this quantifiable data with open-ended, qualitative data.

The survey import wizard automatically sets up your survey for analysis. Upon importation, it creates a case node for each respondent, which codes their answers to the open-ended questions, creates the closed ended questions as attributes (variables) and attaches the values of those attributes to the respondent case nodes and automatically creates a node (code) for each open-ended question. You now have a relational database all ready for analysis.

Another type of convergent design is when you have asked respondents to complete a series of standardised psychological tests, for example, which will give you their scores on anxiety, stress or whatever you are testing for. You then follow up with in-depth interviews about your topic of research. The in-depth interviews will be coded to each respondent’s case node and attached to those case nodes will be their scores in the standardised tests. You will need to set up those scores as attributes in NVivo.

In both cases, you will code the qualitative data and, once coded, you can explore the relationships between the two sets of data. A great tool that NVivo has for exploring those relationships is the Matrix Coding Query. You can set up a matrix table where, for example, the various scores for anxiety make up the rows in the matrix, and the columns are the codes from their qualitative data on, for example, their experiences on their first day at a new job.

Start with your research design

NVivo 11 software can be used to support mixed methods research. It allows researchers to gather and import qualitative and quantitative data into the platform, from quantifiable demographic information to qualitative data ranging from open-ended survey questions to in-depth interviews, as well as pictures and videos. With NVivo, numerous data sources can be automatically imported or simply dragged and dropped into the platform, as text documents, images, audio or video files, spreadsheets, web pages, emails, comments from Facebook and Twitter, as well as YouTube videos.

However, how you use NVivo 11 for mixed methods research depends on the design that you adopt.
The numbers in the cells can represent the number of times a theme is mentioned across the whole dataset or the number of people in that category who mentioned a theme. And you can double click on a cell in the matrix and see ‘the words behind the numbers’. The matrix itself can be turned into a number of different types of charts that you can export into your report or presentation.

**Analyze and explore: An explanatory sequential design**

In this case, you would have started with your quantitative study and analyzed it in whatever statistical package that you use. The results of this analysis might have revealed a particular trend over time, for example, an increase in the number of primary school teachers leaving their profession after ten years. The results of the quantitative study will inform the design of the qualitative study. In this case, the researchers will want to know why teachers are leaving the profession. They might decide to do in-depth interviews with teachers who have recently left the profession to understand their reasons.

In this case, you would just import the qualitative data in NVivo and analyze it. You can also import into NVivo the quantitative report so you can refer to it as you analyze the qualitative data. You would not be importing the raw quantitative data but the report could help you structure your writing up, where you would integrate the findings of both studies using the qualitative data to explain the quantitative results. You can start writing up in NVivo, using Memos to write up the key issues, with ‘see-also’ links to link to the evidence to support the arguments that you are constructing.

**Analyze and explore: An exploratory sequential design**

For this type of design, you would start with the qualitative study. Your research objective may be to design a psychological instrument or design a questionnaire. However, you do not know much about the population or the topic area for which you are designing the instrument or questionnaire. So you start with an exploratory research design where you may, for example, interview a small group of people or observe a setting or organization to get a sense of what the key issues you need to explore or understand what kind of terminology or language is best to use in the instrument that you will eventually design.

You would import and analyze the qualitative data in NVivo. If your objective is to understand the language of your respondents, a word frequency query will produce a word cloud so you can quickly see the words your respondents use. You can double click on the words in the word cloud to see in what context they are used. The word cloud can also give you ideas about which words to use in a text search. Running a text search on a word will produce a word tree, so you can see the five words on either side of your keyword. In that way, you will see quickly all the ways that keyword is used in context. This process can help you design a questionnaire using the language of your respondents.

If your objective is to develop the values for closed-ended questions, you would code your interviews for the themes in your in-depth interviews. The child nodes that you create for the various topic areas that you discuss can be refined to help you design the closed-ended questions with their multiple choice answers. You could visualize this by producing a project map in NVivo. Once your analysis in NVivo is complete, the qualitative side of the study is finished and you would use your results to build the instrument for the quantitative side of the study.
Quick Tips

• Import the research protocol as a means for your study – so you can refer to it while you do your analysis in NVivo.

• Keep a memo as a research journal to write up your reflections as you analyze your data. It will also serve as an audit trail of your analysis process.

• If you are using an explanatory sequential design, import the report from the quantitative study to keep you focused on what aspects you need the qualitative study to explain.

• Matrix queries are a great way to explore relationships in a convergent design.

• Use memos to write up the key issues in your study and use ‘see-also’ links to link to the evidence in the data.

• Set up a node for good quotes

• Use an annotation to remember where the coding was stopped so you can find your place later.

In summary

A mixed methods approach has the potential to uncover further insights by harnessing the strengths of both quantitative and qualitative approaches. NVivo 11 can support the various mixed methods whether using the convergent design, which integrates the quantitative and qualitative databases, or the two sequential designs. NVivo 11 has the tools for them all.


For more information regarding the research and work done with NVivo, please visit our website or contact us here.