

How to...



Run qualitative and quantitative research

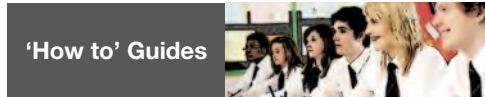
From definitions through to analysis

www.nfer.ac.uk



**Evidence for
Excellence in
Education**

This document is designed to be read with Adobe Acrobat

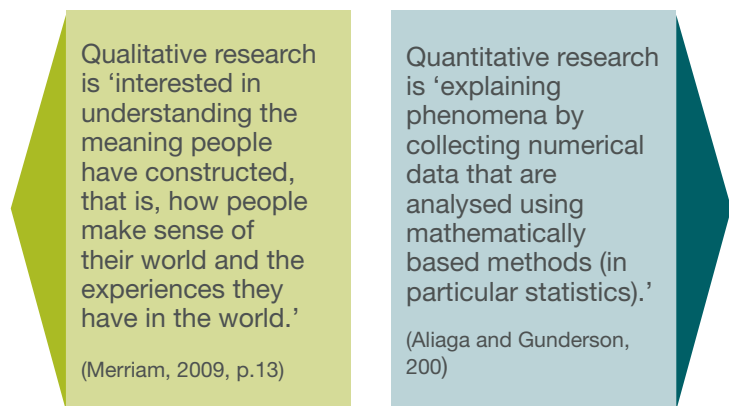


This *How to guide* provides an introduction to qualitative and quantitative research. The guide is intended for senior leaders, teachers and other school staff who are interested in carrying out research.

1 What is qualitative and quantitative research?

Researchers have long debated how to define ‘qualitative’ and ‘quantitative’ research. We are not going to go into that debate here, but instead provide a definition of each which we feel best describes each approach (see Figure 1 below).

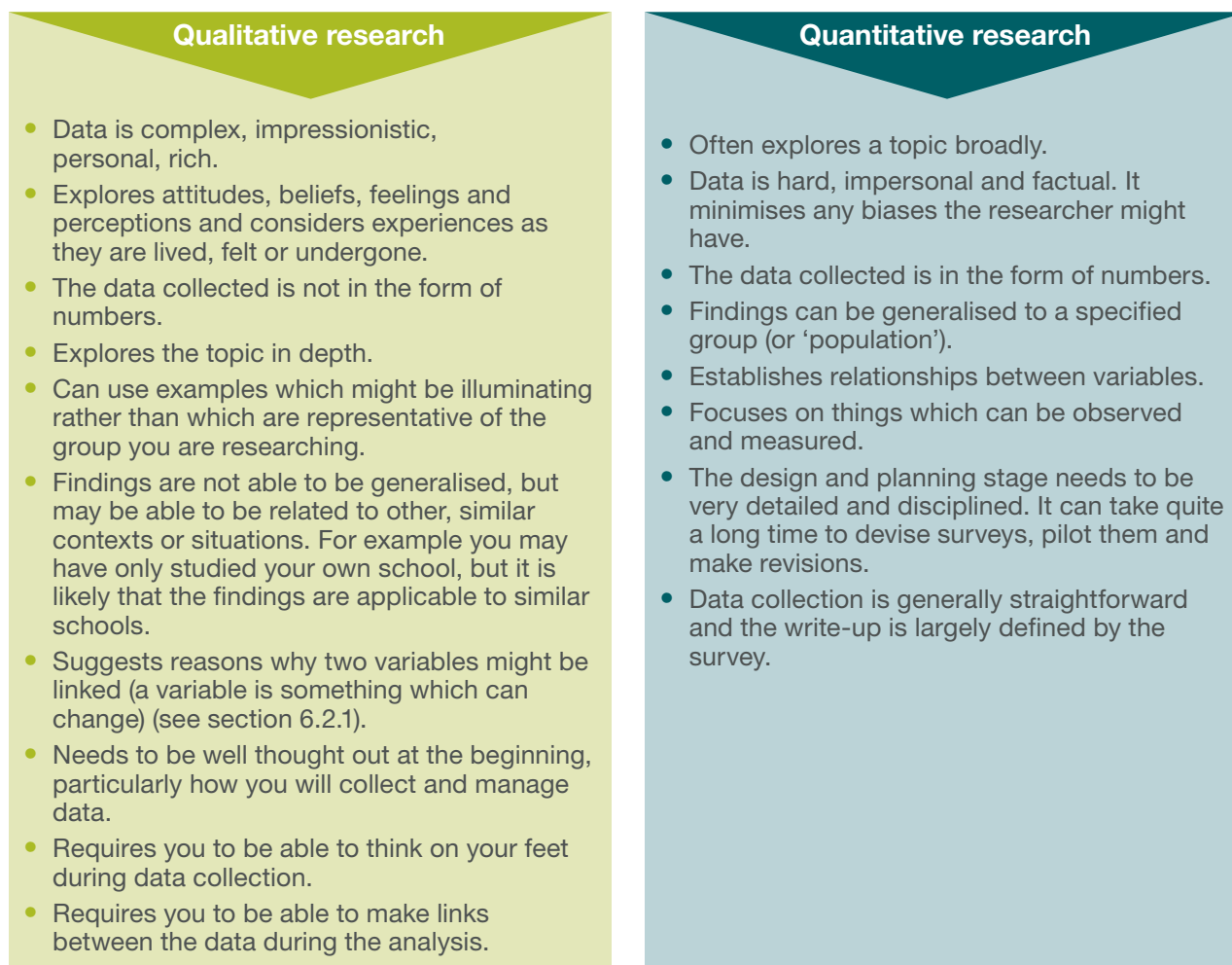
Figure 1 Definitions of qualitative and quantitative research



Indeed, some people think of qualitative research as researching **words** and quantitative research being about **numbers**.

The figure opposite shows some general characteristics of qualitative and quantitative research.

Figure 2 Characteristics of qualitative and quantitative research





2.4 Surveys

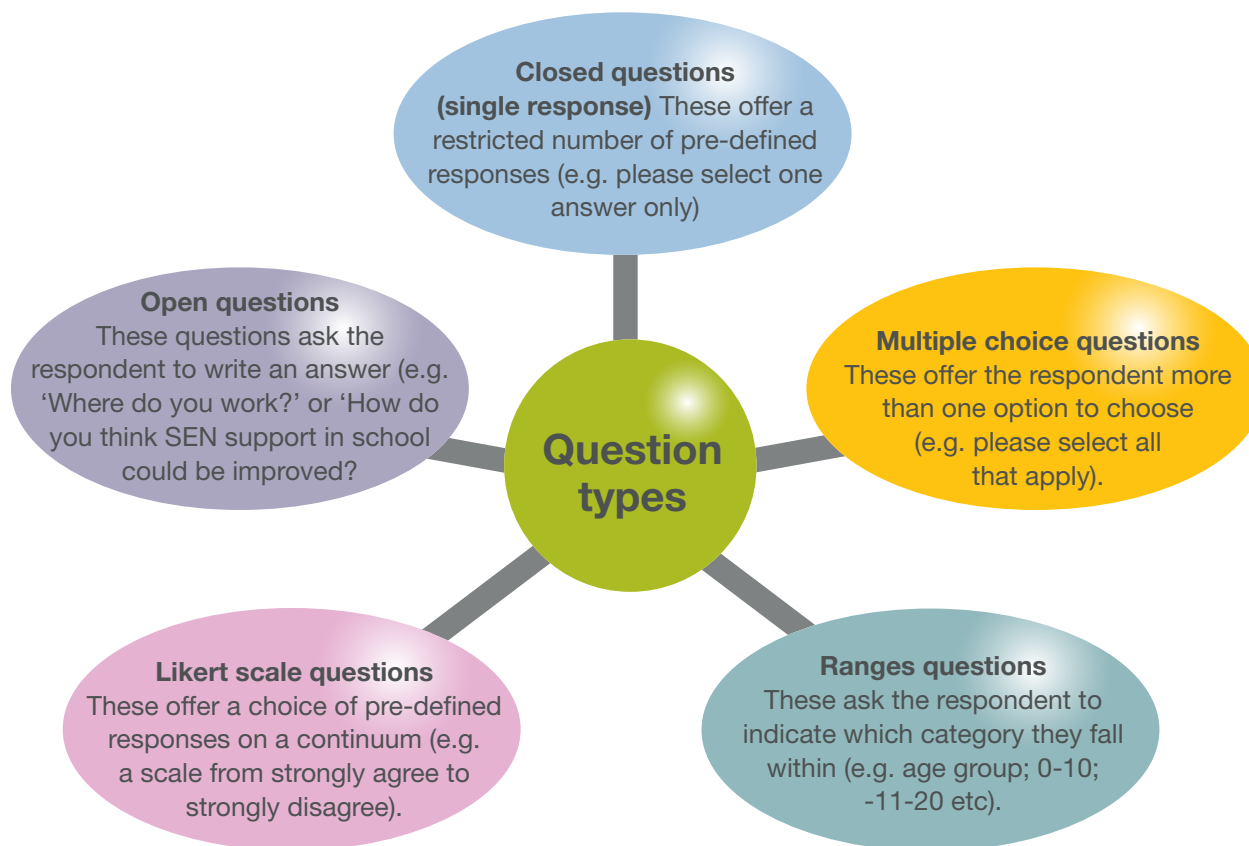
Often the terms 'survey' and 'questionnaire' are used inter-changeably. Surveys are a systematic way of collecting information from individuals and groups, whereas a questionnaire is a set of questions that you ask respondents. Surveys can be self-completed (i.e. the respondent completes the questionnaire individually) or an interviewer can ask respondents the questions. In the latter example, the questions should be asked in exactly the same order and way for all respondents.

Surveys can include questionnaires, face-to-face interviews and can also include observations of people and events (for example how learners use the dining facilities or a library). Surveys are the main method used in quantitative research. They provide an efficient way of collecting views and information from a wide range and large number of people.

Questionnaires can be paper-based or administered via online survey software programmes, such as NFER School Surveys (www.nfer.ac.uk/pps) or Survey Monkey. Using online survey software offers several advantages over paper surveys. These include having no postage costs and the researcher not needing to invest time entering the data manually. Online survey software can also do some of the analysis for you, creating tables of data, for example.

Surveys can include questions of different types and formats. These are presented in Figure 4.

Figure 4 Different types of survey questions





approach is adopted, the findings can sometimes be generalised to the whole population.

Quota sampling: This approach ensures that the sample includes a certain proportion of respondents from particular group/s, even if that proportion does not reflect their prevalence in the population as a whole. For example, you may be particularly interested in a particular ethnic group and stipulate that the sample should contain a certain percentage of participants from specific ethnic groups.

Stratified sampling: With this approach, the population is split into groups (or strata). For example, schools might be stratified based on their proportion of learners who are eligible for free school meals. Within each group you will randomly select a sample.

Cluster sampling: Here the whole population is divided into smaller groups and then a number of those groups are chosen. Within each group, the population is randomly sampled. For example, ten schools (or classes) might be invited to participate in the research but you would administer the survey to a random sample of students within each of those schools or classes.

5 The technical bit

When undertaking research, there are a few other terms you will need to be aware of and, if possible, consider in relation to your project. We briefly introduce each concept in the figure below.

Figure 5 Common research terms

Validity

This tests whether you are actually measuring what you say you are measuring. This is generally applicable to quantitative research but can be applied to qualitative research too.

Reliability

This is an assessment of whether you would get the same results if you (or someone else) repeated the research with the same group of respondents in the future.

Bias

There is always an element of bias in social research, but researchers must try to be objective. As far as possible you should acknowledge your underlying views and assumptions and try to mitigate against these - for example, by looking for evidence that disproves your own view.

Triangulation

Triangulation involves collecting and analysing data from different sources (be these stakeholder groups, test scores or other information) and seeing the extent to which they match. The more the views coincide, the greater the confidence you can have in what you are being told or what appears to be happening. It is also informative when data sources do not coincide, as this can lead to new understandings.



6.2.2. Entering your data

Once you have collected your data, you will need to enter it into some sort of spreadsheet or statistical package. To enter your data, follow this process.

- Give each respondent a unique identifying number (UIN); if you are carrying out your research in several classes or schools, you may want to give each class or school its own UIN as well.
- If the data is continuous, just enter the value, for example a test score of 66 per cent.
- If the data is categorical, you will need to code it. This means that you will assign a number to a particular response option and enter the number into your spreadsheet ready for analysis. For example, if you have asked what subject the respondent teaches, you would assign a number to each possible response (i.e. chemistry=1; biology=2 etc.). This makes analysis easier.

Once all the data has been entered, you can use basic statistical techniques to analyse it.

References

Aliaga, M., and Gunderson, B. (2000). *Interactive Statistics*. Saddle River, NJ: Prentice Hall. Cited in: Muijs, D. (2011). *Doing Quantitative Research in Education with SPSS*. Second edn. London: Sage.

Merriam, S. (2009). *Qualitative Research: a Guide to Design and Implementation*. San Francisco, CA: Jossey-Bass.

Muijs, D. (2011). *Doing Quantitative Research in Education with SPSS*. Second edn. London: Sage.

Useful resources

We hope that this short guide to running qualitative and quantitative research has whetted your appetite for carrying out your own research. NFER has published a series of 'How to' guides for practitioners who want to carry out their own research, helping you put your ideas into practice. NFER have research books and training days available as well as free guidance on topics to research and methods of research. Why not get recognition for your achievements in research in your school, college or early years setting by applying for the NFER Research Mark? Visit www.nfer.ac.uk/ris for more information.



Table 1 Summary of research methods' strengths and weaknesses

This table summarises the strengths and weaknesses of each method.

Research method	Strengths and advantages	Weaknesses and disadvantages	Points to consider
<p>Interviews</p> <p>Mainly used in qualitative research.</p>	<ul style="list-style-type: none"> • Interviews can explore issues in depth. • Questions can be modified during the interview to allow the interviewer to respond to the direction of the discussion and follow up any ambiguous responses. • These may be suitable for exploring sensitive topics. • Interviews gather data using the respondent's voice and language. 	<ul style="list-style-type: none"> • Interviews can be time consuming to conduct and to transcribe and analyse the data. • Interviews are carried out with small samples. • It can be easy for researcher bias to creep in. • There is a need to ensure that the questions are unambiguous and do not lead the respondent. For example, saying 'The CPD on offer in this school is the best I have ever known; don't you agree?' may prompt the respondent to agree with you rather than tell you his/her own view. 	<ul style="list-style-type: none"> • How are you going to conduct the interviews (e.g. by phone, face-to-face, video-calling/webcam)? • Where are you going to conduct the interviews? You will need a quiet place without interruptions. • How will you record your data, e.g. will you audio-record; what sort of notes will you type up? Full transcriptions take time; it can take up to six times as long to type the notes as to conduct the interview. For most research, you can type less detailed notes, supported by transcriptions of quotations or examples. • How will you abide by the legal requirements of protecting your participants' data (i.e. anonymity and confidentiality)?
<p>Focus groups</p> <p>Mainly used in qualitative research.</p>	<ul style="list-style-type: none"> • Focus groups can offer an efficient way of collecting a range of opinions from groups of people. • Group dynamics can quickly highlight areas where there are consistent or opposing views; and which areas are important to the respondents. • It helps to arrange focus groups if you can tap into pre-existing groups or committees. For example, you could ask the school council to stay for an hour after their meeting to attend your focus group. 	<ul style="list-style-type: none"> • The number of questions you can ask will be limited. • The facilitator needs to manage the discussion so that all voices are heard. • Power struggles can arise between participants. • There may be resource and logistical implications if you need a facilitator and a note-taker. • Focus groups usually last for longer than interviews and between one-and-a-half and two hours (depending on the topic area and age of participants). • You will need to find a large enough room to accommodate your participants. • You may need to provide drinks and snacks. • Transcription and analysis can be complex and time consuming. 	<ul style="list-style-type: none"> • You must ensure confidentiality and anonymity in a group situation. It is useful to set ground rules at the start of the focus group by asking the participants to sign up to a statement of confidentiality whereby everything said within the room will remain confidential to only those participants present. <p>See the NFER 'How to... Run focus groups: Get the most from them' available from www.nfer.ac.uk/ris</p>



Research method	Strengths and advantages	Weaknesses and disadvantages	Points to consider
<p>Observations</p> <p>Mainly used in qualitative research.</p>	<ul style="list-style-type: none"> • Observations are very useful for finding out what is going on in a situation, such as a classroom, dining hall or playground. • They are useful for accessing non-verbal data. • They can provide an opportunity to record events or the frequency of specific incidents. 	<ul style="list-style-type: none"> • Observations can be time consuming to arrange, conduct, write up and analyse. • There is a need to mitigate researcher bias, particularly in the case of participant observation. • Be aware that the presence of another person in the setting can alter the way that people behave. 	<ul style="list-style-type: none"> • How are you going to record the observation? • What will your role be; will you be a participant or non-participant? How will you record the data if you are a participant?
<p>Surveys</p> <p>Mainly used in quantitative research, but can sometimes be used qualitatively.</p>	<ul style="list-style-type: none"> • Surveys are useful for gathering views from a large and broad range of respondents. • Surveys can be anonymous. • Data between individuals and groups is easy to compare. • Surveys collect specific information that can be counted and statistically analysed. 	<ul style="list-style-type: none"> • Data entry can be time consuming for paper-based questionnaires. • Response rates can be low; typically between 20 and 40 per cent for postal and online surveys, so you may need a large sample to get your desired number of participants. With parents, response rates can be as low as 10 to 20 per cent. • There is no chance for following-up or exploring ambiguous responses, or probing the reason behind a specific response. • Questions can be misinterpreted by the participant (piloting can help mitigate this). 	<ul style="list-style-type: none"> • Where and when (if at all) will you pilot the questionnaire? • How will the survey be administered – by post, in person, online, by text message? • How will you remind participants who have not responded to complete the survey by your specified date? • How will you decide on the sample to be surveyed? • How will you obtain the contact details for postal/online surveys?
<p>Quasi-experimental</p>	<ul style="list-style-type: none"> • Quasi-experimental research is useful for gathering information on whether something is having an effect (or impact) as it collects data from comparable control and experimental groups. • It can provide robust evidence. 	<ul style="list-style-type: none"> • It can be difficult to obtain comparable groups 	<ul style="list-style-type: none"> • How are you going to assign the control and experimental groups? • There are a number of ethical considerations; if the intervention has a positive effect then is the control group at a disadvantage? How will you mitigate this?

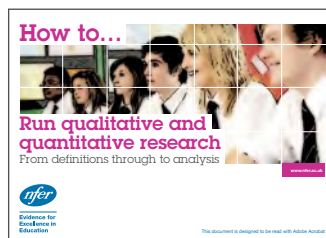
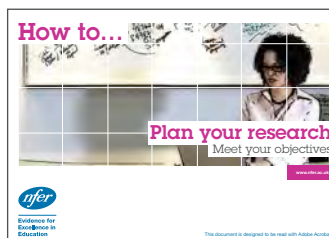
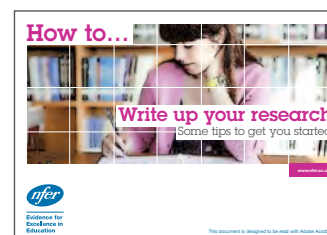
Run qualitative and quantitative research

'How to' Guides



The NFER 'How to' guides are a quick and easy way to digest different aspects of research.

Written by NFER researchers, these guides will help practitioners run research projects in education. From definitions and benefits, through to potential pitfalls, they will ensure the research is based on professional guidance.



© 2013 National Foundation for Educational Research

ISBN 978-1-908666-80-2

How to cite this publication: National Foundation for Educational Research (2013). *How to... Run qualitative and quantitative research: From definitions through to analysis* (How to Guides). Slough: NFER.

All rights reserved. No part of this document may be reproduced or transmitted in any form or by any means, electronic, mechanical, photocopying, or otherwise, without prior written permission of NFER.

National Foundation for Educational Research

The Mere, Upton Park, Slough, Berks, SL1 2DQ

T +44 (0)1753 637007

F +44 (0)1753 790114

E products@nfer.ac.uk

www.nfer.ac.uk

This guide was published in 2013 and was correct at the time of publication. Users are encouraged to check for the latest advice on data protection with the provisions of the General Data Protection Regulation. For further information please visit the [ICO website](http://ico.org.uk).



● independent ● insights ● breadth ● connections ● outcomes