



DOING YOUR RESEARCH PROJECT

A guide for first-time researchers
in education and social science

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DESIGNING AND ADMINISTERING QUESTIONNAIRES

You will only reach the stage of designing a questionnaire after you have done all the preliminary work on planning, consulting and deciding exactly what you need to find out. Only then will you know whether a questionnaire is suitable for the purpose and likely to yield usable data. Ask yourself whether a questionnaire is likely to be a better way of collecting information than interviews or observation, for example. If it is, then you will need to ensure you produce a well-designed questionnaire that will give you the information you need, that will be acceptable to your subjects and that will give you no problems at the analysis and interpretation stage.

It is harder to produce a really good questionnaire than might be imagined. Oppenheim (1966: vii), in the Preface to his book *Questionnaire Design and Attitude Measurement*, wrote that 'the world is full of well meaning people who believe that anyone who can write plain English and has a modicum of common sense can produce a good questionnaire'. He goes on to demonstrate that though common sense and the ability to write plain English will help, that will not be sufficient. Care has to be taken in selecting question type, in question-writing, in the design, piloting, distribution and return of questionnaires. Thought must be given to

how responses will be analysed at the design stage, not after all the questionnaires have been returned. Questionnaires are a good way of collecting certain types of information quickly and relatively cheaply as long as you are sufficiently disciplined to abandon questions that are superfluous to the main task.

Exactly what do you need to find out?

Your preliminary reading and your research plan will have identified important areas for investigation. Go back to your hypothesis or to the objectives and decide which questions you need to ask to achieve these objectives. Then write out possible questions on cards or on separate pieces of paper, to aid ordering at a later stage. You will need several attempts at wording in order to remove ambiguity, to achieve the degree of precision necessary to ensure that subjects understand exactly what you are asking, to check that your language is jargon free, to decide which question type to use and to ensure that you will be able to classify and analyse responses. Guidance about analysis is provided in Chapter 12, and before you complete your questionnaire design you should read this chapter carefully. Time spent on preparation will save many hours of work later on.

Question type

The more structured a question, the easier it will be to analyse. Youngman (1986) lists seven question types as follows:

Verbal	The expected response is a word, a phrase or an
or	extended comment. Responses to verbal questions
Open	can produce useful information but analysis can
	present problems. Some form of content analysis
	may be required for verbal material unless the infor-
	mation obtained is to be used for special purposes.
	For example, you might feel it necessary to give
	respondents the opportunity to give their own
	views on the topic being researched – or to raise a

grievance. You might wish to use questions as an introduction to a follow-up interview, or in pilot interviews where it is important to know which aspects of the topic are of particular importance to the respondents.

More structured questions will not present so many problems at the analysis stage. Youngman suggests the following:

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| List | A list of items is offered, any of which may be selected. For example, a question may ask about qualifications and the respondent may have several of the qualifications listed. |
| Category | The response is one only of a given set of categories. For example, if age categories are provided (20-29, 30-39, etc.), the respondent can only fit into one category. |
| Ranking | In ranking questions, the respondent is asked to place something in rank order. For example, the respondent might be asked to place qualities or characteristics in order. |
| Scale | There are various stages of scaling devices (nominal, ordinal, interval, ratio) which may be used in questionnaires, but they require careful handling. |
| Quantity | The response is a number (exact or approximate), giving the amount of some characteristics. |
| Grid | A table or grid is provided to record answers to two or more questions at the same time. |

Students have discovered that once they have tried out and become familiar with different ways of analysing and presenting questionnaire responses to list, category, ranking, scale, quantity or grid questions, they are able to select the most appropriate format when they come to the stage of designing and analysing data in their project.

Question wording

Ambiguity, imprecision and assumption

Words which have a common meaning to you may mean something different to other people, so you need to consider what your questions might mean to different respondents. For example, suppose you want to find out how much time mature students spend studying. You ask:

How much time, on	A great deal	☐
average, do you spend	A certain amount	☐
studying?	Not much	☐

What will you do with the responses? What will they mean? 'A great deal' may mean something different for student A than for student B. In any case, students may spend twenty hours a week at some times of the year but probably not more than four at other times. What is 'average'? If you really wish to know how much time students spend studying, you will need to find different ways of putting the question. When you think about this topic you may decide you have to ask students to keep a diary for a specific period of time. You may need to specify the time spent studying different subjects. It will all depend on exactly what it is you need to know. Once you are clear about that, you will be able to word your questions sufficiently precisely to ensure that they mean the same to all respondents.

If respondents are confused, or if they hesitate over an answer, they may pass on to the next question. You want answers to all questions if at all possible, so try to avoid confusion.

The following question seems straightforward, but is it?

Which type of school does your child attend? (Please tick)	Infant school	☐
	Primary school	☐
	Comprehensive school	☐
	Grammar school	☐
	Other (please specify)	☐

There is an assumption in this question that the respondent has one child. If she has none or four, one in an infant school, one in a primary school and two in a comprehensive school, what does she do? Does she tick all boxes or none? Does she put the number of children in the appropriate box? Are you prepared for a category response, or had you intended this to be a list? It may not matter, but if your analysis is planned on the basis of a category response, you will give yourself extra trouble when list responses are given. Incidentally, your respondents might well ask why you want this information. Do you? Is the information essential for your study? If not, leave it out.

Memory

Memory plays tricks. If you were asked to say which television programmes you saw last week, could you remember everything? Could you be sure that one particular programme was last week – or was it the week before? Consider the following question, which appeared in a questionnaire concerned with parents' education. At first sight, it seems perfectly clear.

What subjects did you study at school?

If respondents left school recently, they may be able to remember quite clearly, but if they left school 20 or more years ago, they may find it difficult to remember. If they do not include English in the list of subjects, would that mean that no English was studied or did they just forget to include it? Consider what information you really need. If you want to know which of a list of subjects that respondent studied, you might decide it would be better to provide a list of subjects which can be ticked. That way, you would ensure that main subjects were covered – but the type of question will depend on the type of information needed.

Knowledge

Take care over questions which ask for information that the respondents may not know or may not have readily to hand. For

example, it may seem reasonable to ask mature students what the criteria are for allocating students to tutorial groups. But the likelihood is that they will not know: and if respondents have to search for information, they may decide to abandon the entire questionnaire.

Double questions

It may seem obvious to remind you that double questions should never be asked, but it is easy to overlook the following type of question:

Do you attend maths and chemistry classes?

Would the answer 'Yes' mean that you attend both, or one? If you need to know, the question should be divided into:

Do you attend maths classes?

and

Do you attend chemistry classes?

Leading questions

It is not always easy to spot a leading question, but the use of emotive language or the way a question is put can lead respondents to answer questions in one way. For example:

Do you not agree that mature students should have the right to express their views in tutorials?

Well, it might be difficult for students to answer 'No' in response to that question.

Presuming questions

Presuming questions are often a source of error in questionnaires. When they are included it is often because the researcher holds

strong views about a subject and overlooks the fact that everyone may not feel the same way. For example:

Does the university/college make adequate provision for counselling?

You may think that all institutions should provide a counselling service. But what if your respondents do not? What if they do not really know what the counselling service does? In its present form, 'adequate' is meaningless. There is a presumption in the question that a counselling service is necessary, and that makes the question invalid.

Hypothetical questions

Watch for questions that will provide only useless responses. Most hypothetical questions come into this category. For example:

If you had no family responsibilities and plenty of money, what would you do with your life?

But, a respondent might answer, I do have family responsibilities. I have no money and never shall have as far as I can see, so what's the point of thinking about it?

Offensive questions and questions covering sensitive issues

It goes without saying that questions that may cause offence should be removed. If you really need information on what might be regarded by some respondents as sensitive issues, you will need to take extra care in the wording and positioning of questions. Some researchers think it is better to place such questions towards the end of the questionnaire, the theory being that if respondents abandon the questionnaire at that point, you at least have answers to all the earlier questions.

Age is often considered to be in the sensitive category and

rather than asking respondents to give their exact age, it may be better to ask them to indicate the category, as follows:

What is your age?	20 or younger	☐
	21-24	☐
	25-29	☐
	30-34	☐
	35 or older	☐

Be careful not to have overlapping categories. It is not uncommon to see age categories listed as 21 or less, 21-25, 25-30, etc.

Appearance and layout

An excellently prepared questionnaire will lose much of its impact if it looks untidy. Look at some of the published surveys which used a questionnaire as one method of data collection and they will give you ideas about layout. Recipients need to be encouraged to read and to answer the questions and they may be put off by a scruffy document that has been hastily prepared. There are no hard-and-fast rules about layout, but there are a few common-sense guidelines that will help appearance.

- 1 Questionnaires should be typed (or printed, if you are conducting a very large survey).
- 2 Instructions should be clear (in capitals, or in a different font).
- 3 Spacing between questions will help the reader and will also help you when you analyse responses.
- 4 If you want to keep the questionnaire to a limited number of sheets, it may be better to photo-reduce copy.
- 5 Keep any response boxes in line towards the right of the sheet. This will make it easy for respondents and will help you to extract information.
- 6 If you intend to use a computer program, allow space on the right of the sheet for coding.
- 7 Look critically at your questionnaire and ask yourself what impression it would give if you were the recipient.
- 8 Take care over the order of the questions. Leave sensitive issues

to later in the questionnaire. Start with straightforward, easy-to-complete questions and move on to the more complex topics (writing questions on cards or separate pieces of paper will make it easy to sort and re-sort questions).

Drawing a sample

The number of subjects in your investigation will necessarily depend on the amount of time you have. If you are working on a 100-hour project, you will not be able to include all mature undergraduates in the country. If you have decided to restrict your research to one institution, then you will need to find out how many mature undergraduates are there. If there are 100 you will be unlikely to have the time or the means to include them all. You will need to select a sample.

In very large surveys, like the census, sampling techniques will be employed in order to produce a sample which is, as far as possible, representative of the population as a whole. Generalizations can then be made from the findings. In small studies, we have to do the best we can.

All researchers are dependent on the goodwill and availability of subjects, and it will probably be difficult for an individual researcher working on a small-scale project to achieve a true random sample. If that proves to be the case, you may be forced to interview anyone from the total population who is available and willing at the time. Opportunity samples of this kind are generally acceptable as long as the make-up of the sample is clearly stated and the limitations of such data are realized. However, even in a small study, efforts should be made to select as representative a sample as possible. Say you decide to include 50 per cent of your population. A random sample will give each of the individuals concerned an equal chance of being selected. You may decide to select alternate names on an alphabetical list, the first person being selected by sticking a pin in the paper. Everyone selected may not be willing to participate, and so it is wise to have reserve names available. For example, if the twentieth person refused or was not available, you might have decided beforehand, and as part of your research design, to approach the twenty-first.

There may be occasions when you wish to include representative sub-groups. You perhaps wish to select the appropriate proportion of men and women, of individuals in different age categories or some other sub-group of the target population. If so, you might have the following type of stratification.

Total target population: 100

Number of men: 60. Number of women: 40.

Instead of selecting alternate names, the sample population could be selected on the basis of every second man and every second woman, and so 30 men and 20 women would be selected.

If you wished to find out how many men and women had A levels on entry, you could take the process one step further, as follows:

	<i>Men</i>	<i>Women</i>	<i>Total</i>
Had A levels on entry	30	10	40
Did not have A levels on entry	30	30	60
<i>Total</i>	60	40	100

If sex and A levels on entry were particularly important, then the sub-groups would be specified as part of the research design, and the sample would be drawn in the appropriate proportion from each sub-group or cell. This is a rather crude example, but, for a small-scale exercise, it will generally be an acceptable way of selecting a sample. If a more scientific approach is required for your project, you will need to read further and to acquire a certain amount of statistical expertise.

Further reading is indicated at the end of the chapter.

Piloting the questionnaire

All data-gathering instruments should be piloted to test how long it takes recipients to complete them, to check that all questions and instructions are clear and to enable you to remove any items

which do not yield usable data. There is a temptation in a small study to go straight to the distribution stage, but however pressed for time you are, do your best to give the questionnaire a trial run, even if you have to press-gang members of your family or friends. Ideally, it should be tried out on a group similar to the one that will form the population of your study, but if that is not possible, make do with whoever you can get. Respondents will tell you how long it took to complete the questionnaire, and if they leave any questions unanswered, you will be able to find out why. The purpose of a pilot exercise is to get the bugs out of the instrument so that subjects in your main study will experience no difficulties in completing it and so that you can carry out a preliminary analysis to see whether the wording and format of questions will present any difficulties when the main data are analysed.

Ask your guinea-pigs the following questions:

- 1 How long did it take you to complete?
- 2 Were the instructions clear?
- 3 Were any of the questions unclear or ambiguous? If so, will you say which and why?
- 4 Did you object to answering any of the questions?
- 5 In your opinion, has any major topic been omitted?
- 6 Was the layout of the questionnaire clear/attractive?
- 7 Any comments?

Their responses will enable you to revise the questionnaire ready for the main distribution. It will take you some time to achieve a good standard of design and presentation, but if the preparation is sound, it will save you hours and even weeks of work at the analysis stage.

Distribution and return of questionnaires



You will need to make an early decision about how to distribute your questionnaire and what to do about non-response. There are distinct advantages in being able to give questionnaires to subjects personally. You can explain the purpose of the study, and in some cases questionnaires can be completed on the spot. You are

likely to get better cooperation if you can establish personal contact, but if that is impossible, you will need to investigate other ways of distribution. Permission can sometimes be obtained to distribute through internal mailing systems. Colleagues and friends may be persuaded to lend a hand. If all else fails, you may have to mail copies, but postal surveys are expensive and response rates are generally low, so you would only wish to resort to distribution by post if you found it impossible to contact subjects by any other means.

Unless you are meeting subjects face-to-face, an accompanying letter will be required, explaining the purpose of the questionnaire, indicating that official approval has been given (if that is the case) and saying what will be done with the information provided. Confidentiality and/or anonymity is usually promised, but before you promise either, decide what that means. Does it mean that there will be no way of identifying respondents or does it mean that only you and specified people will see the returns? Does it mean that you will publish the findings, but that no names will be mentioned in the report? Re-read Chapter 3 in which Stephen Waters talks about the problems he encountered over the principle of confidentiality and then decide what you can or cannot promise. It is important to be clear about this before questionnaires are distributed.

Take care with the wording of your letter. A letter that is too brusque or too ingratiating can have an adverse effect on response, so show your draft letter to a few friends and ask their opinion. Remember to give the return date, either in the letter or in a prominent position on the questionnaire. Experience has shown that it is unwise to allow too long. If no date is specified or if too long is given, it becomes too easy for subjects to put the questionnaire to one side, which often means that it will never be seen again. Two weeks is a reasonable time for completion. Give the precise day and date rather than relying on a polite request for the questionnaire to be returned in two weeks' time. For some reason, it seems to help to jog memories if the day as well as the date is stated.

Include a self-addressed envelope (stamped, if respondents have to return the questionnaire by post).

Non-response

Keep a careful record of the date questionnaires were distributed and the date they were returned. Generally, there is a good response at first and then returns slow down. Inevitably, all will not be returned by the specified date, so if you have decided to follow up non-respondents, a second letter and questionnaire will have to be sent.

If you do not ask for names to be given, or devise some system of numbering, you will have no way of knowing who has replied and who has not, and so there can be no follow up. If you promise anonymity, there can be no cunning little symbols that tell you who has replied. Anonymity means that there is no way of linking responses with individuals, so a decision has to be made about follow up *before* the questionnaires are distributed. As Moser and Kalton (1971: 267–8) point out, 'non-response is a problem because of the likelihood – repeatedly confirmed in practice – that people who do not return questionnaires differ from those who do'. Scott (1961), whose article 'Research on mail surveys' is a major resource for investigators undertaking large-scale projects involving postal questionnaires, takes the view that if non-response is as low as 10 per cent, in most cases it does not matter very much how biased the non-respondents are, but a higher non-response rate could distort results, and so, if at all possible, some effort should be made to encourage more people to return completed questionnaires.

Opinions vary as to the best time to send out follow-up requests, but in a limited-time project you will need to write about a week after the original date if you are to complete data collection in the time allocated. In some large projects a third and even a fourth reminder will be sent, but the number of returns obtained by this process is unlikely to warrant the time and trouble it will involve.

Analysis of data

In an ideal world it would be best to wait for all questionnaires to be returned and to glance through all responses before beginning

to code and record. In a limited-time project it may be necessary to begin recording responses as soon as the first questionnaires are returned. The procedures for analysing and presenting results, described in Chapter 12, may influence the way you structure the questionnaire and word the questions, so before you decide finally on content and format, read this chapter carefully.

Questionnaire checklist

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| 1 Decide what you need to know. | List all items about which information is required. |
| 2 Ask yourself why you need this information. | Examine your list and remove any item that is not directly associated with the task. |
| 3 Is a questionnaire the best way of obtaining the information? | Consider alternatives. |
| 4 If so, begin to word questions. | Write questions on separate cards or pieces of paper, to help ordering later on. Consider question type (verbal, grid, etc.). |
| 5 Check wording of each question. Is there any ambiguity, imprecision or assumption? Are you asking respondents to remember? Will they be able to? Are you asking for knowledge respondents may not have? Any double, leading, presuming, hypothetical or offensive questions? | Keep language simple. Don't use words respondents may not understand (that includes technical language), unless you are dealing with a professional group all of whom understand your linguistic short cuts. |
| 6 Decide on the question type. | Verbal, list, category, ranking, scale, quantity or grid. Each type requires a different analysis (see Chapter 12 for further information). |
| 7 When you are satisfied that all questions are well worded and of the right type, sort into order. | It is often best to leave sensitive issues until later in the questionnaire. |

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| 8 Write out instructions to be included on the questionnaire. | Respondents must be quite clear about how they are to answer questions (ticks in boxes, Yes/No, etc.). |
| 9 Consider layout and appearance. | Instructions must be clearly presented (perhaps different font displayed in a prominent position?) Decide whether you need a right-hand margin for coding. |
| 10 Hand over your questionnaire for typing or printing – or type it yourself. | Instructions to the typist must be absolutely clear. It is your job to decide how the questionnaire should be displayed, not the typist's. |
| 11 Decide on your sample. | If possible, select a sample which will give you subjects who are likely to be representative of the population. If you have to make do with an opportunity sample, say why in your report. |
| 12 Pilot your questionnaire. | Ideally, it should be sent to people who are similar to your selected sample. However, if that is not possible, ask friends, family or colleagues to help. |
| 13 Try out your methods of analysis. Read Chapter 12 before you decide finally on format and analysis. | Even with five or six completed questionnaires, you will be able to see whether any problems are likely to arise when you analyse the main returns. |
| 14 Make any adjustments to the questionnaire in the light of pilot respondents' comments and your preliminary analysis. | Consider timing. If it took your guinea-pigs too long to complete, consider whether any items might be removed. |
| 15 Decide at an early stage how the questionnaires are to be distributed. | By post? Internal mail? By you? If you decide on a postal survey, include a stamped addressed envelope. People are doing you a favour by completing the |

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| 16 Unless you are administering the questionnaire personally, include a covering letter and a self-addressed envelope. | questionnaire. Don't expect them to pay for the privilege.
Explain the purpose of the study. If you have official approval to carry out the study, say so. |
| 17 Don't forget to say when you would like questionnaires to be returned. | Keep a record of when questionnaires were distributed and when returned. |
| 18 Decide what you are going to do about non-respondents BEFORE you distribute the questionnaires. | Remember you will not be able to send out reminders if all responses are anonymous. |
| 19 Do not distribute questionnaires before checking whether approval is required. | Never assume 'it will be all right'. |
| 20 Begin to record data as soon as completed questionnaires are returned. | You have no time to wait for stragglers. |
| 21 Do not get involved with complicated statistics unless you know what you are doing. | It is perfectly possible to produce a good report without extensive statistical knowledge, as long as the structure of the questionnaire is well thought out. |

Further reading

Most books dealing with research methods will have a chapter on the design of questionnaires and so the only items listed here are standard texts which should be readily available in libraries. All provide good advice and will provide a sound foundation if you plan to design a questionnaire as part of your investigation.

- Moser, C.A. and Kalton, G. (1971) *Survey Methods in Social Investigation*. London: Heinemann. See Chapters 11 and 13.
- Oppenheim, A.N. (1966) *Questionnaire Design and Attitude Measurement*. London, Heinemann. Rather old now, but still provides a wealth of information about questionnaire design.
- Scott, C. (1961) 'Research on mail surveys', *Journal of the Royal Statistical Society, Series A* (124), 143–205. This article is well worth study, if it can be obtained. If not, many of the issues Scott discusses are covered in Moser and Kalton.
- Youngman, M.B. (1982) *Designing and Analysing Questionnaires*. Rediguide 12. University of Nottingham, School of Education. Also reproduced as Chapter 10 in Bell, J. *et al.* (1984) *Conducting Small-scale Investigations in Educational Management*. London: Harper & Row. One of the best and most straightforward guides to questionnaire design and distribution. A revised version of this Rediguide appears as Chapter 17 in Bennett *et al.* (1994) *Improving Educational Management through Research and Consultancy*. London: Paul Chapman.



PLANNING AND CONDUCTING INTERVIEWS

A major advantage of the interview is its adaptability. A skilful interviewer can follow up ideas, probe responses and investigate motives and feelings, which the questionnaire can never do. The way in which a response is made (the tone of voice, facial expression, hesitation, etc.) can provide information that a written response would conceal. Questionnaire responses have to be taken at face value, but a response in an interview can be developed and clarified.

There are problems of course. Interviews are time-consuming, and so in a 100-hour project you will be able to interview only a relatively small number of people. It is a highly subjective technique and therefore there is always the danger of bias. Analysing responses can present problems, and wording the questions is almost as demanding for interviews as it is for questionnaires. Even so, the interview can yield rich material and can often put flesh on the bones of questionnaire responses.

Moser and Kalton (1971: 271) describe the survey interview as 'a conversation between interviewer and respondent with the purpose of eliciting certain information from the respondent'. This, they continue, might appear a straightforward matter, but the attainment of a successful interview is much more complex than this statement might suggest.

Wiseman and Aron (1972) liken interviewing to a fishing