# How to...

# Write up your research

## Some tips to get you started

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# **Write up your research** – some tips to get you started 2



This short guide provides an introduction to writing up your research. It will take you through some of the main questions and concerns you might have and provide you with tips to get you started on your report. This guide does not cover other ways of presenting your research findings (such as presentations) although many of the same principles apply. It aims to help senior leaders, teachers and other school staff who are thinking about undertaking research.

The first thing to decide is whether you need to write a research report at all. It may be that your findings lend themselves to other ways of presenting and sharing the messages from the research. These could include a short summary paper that outlines the main messages for key stakeholder groups; a presentation that identifies the key messages that you can talk through with your peers; a blog; or a video report. You could, of course, produce a combination of these things to ensure your research is accessed by the widest number of stakeholders.

## 1 When should I start to write?

It is never too early to start writing your research report. In our *How to plan your research guide* (see www.nfer.ac.uk/ris), we recommend that during the planning phase you think about your research output(s) and who your audiences are. This will make writing your report easier at the end.

You can start to write sections for your report throughout your research project. For example, you could write your introduction and some of your methodology sections quite early on – these do not need to wait until the end. Anything you can do earlier will save you time later. Draft sections can always be amended and updated at a later stage.

Some people will do their analysis and report writing concurrently. We recommend, however, that you complete your analysis *before* you start writing about the findings. Having completed all your analysis, you will know what the data is telling you and will have a good idea about how you want to present these messages. Completing your analysis will also give you some time for reflection and *planning* of your report. Investing time in planning your report will save you time and rewriting later. It will also help you to produce a more succinct, well-structured, well-written output.

Writing is not a fast process. Sometimes you will feel like you are not getting very far. Having a plan that breaks the writing down into manageable chunks, will support you through moments of writer's block and make the overall task seem less daunting. While you write, you will need to revise and rewrite what you have written, maybe several times. Some sections may only need one or two revisions whereas you may need to rewrite others many times before you get it right.

Notes

## 2 What should a research report contain?

This very much depends on *who* the final document is for and what you agreed to produce at the outset. If your research is comissioned by someone else, for example, they may require a written report with specific areas they want covered. If you have designed your own research, there is no fixed format that your report has to take. Nevertheless, all research reports tend to cover some common areas. These are given below.

**Title: This should give the reader an idea of what the research is about.** A snappy or imaginative title often helps to engage readers.

**Introduction: This should introduce the research and explain what it is about.** In particular it should:

- tell the reader what the aims and purpose of the research are
- outline your research questions
- briefly explain what methodological approach you undertook (for example; quantitative, qualitative, mixed methods, action research).

You may choose to tell the reader why you are interested in this topic or give some background to the research (particularly if you have not done a literature review).

**Summary of the literature and/or policy context (optional): It is a good idea to situate your research within the context of other research or current policy.** For larger scale studies, you may well have carried out a literature review, which you could summarise here. For a short research project, this section may be quite brief. If possible, it should include:

- what is already known about the subject you are interested in (if it is a big topic then only include things which are directly relevant)
- where the gaps in the previous research are, which your research might help to fill.

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**Methodology: It is important to provide some information about your research methodology.** This will help others to understand your project, its level of robustness or any limitations, and how they could go about replicating your research.

The methodology section should give details about:

- how the research has been conducted
- what methods were chosen and why
- who the respondents were; how many there were; why and how they were chosen.

Ensure you do not identify anyone in this section or elsewhere in your report. Even where you do not name someone, you could inadvertently identify someone if you give too much information. For example, saying something like: 'One participant, who had been at the school for fifteen years, said they were happy and excited about the future changes to the ICT curriculum' could make it easy for people to work out who said this.

You may also want to include information about:

- any problems you encountered during the research and how this affected the project
- how far what you have found can be applied to other situations, for example; is the finding only going to apply to your school or is it also likely to be of use in others too?

Increasingly research report authors are putting a brief overview of their methodology in the main body of the report and a more detailed version in the appendix. This can help to keep the report shorter and help the reader to get to the findings sooner. Furthermore, not everyone is interested in hearing about the methodology in detail. You will need to decide what suits your audience best.

**Key findings: This is the main section of your report.** Here you will present your data and the research findings. Often this section is split into sub-sections, which are driven by your data analysis. So if your analysis uncovered different themes, you might choose to devote a sub-section to each of these.

It will help your readers to get the most from the report if you think about how to present the data in an interesting way.

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If you have conducted a survey and/or collected numerical data, you may want to include charts, graphs and/or tables to make the data easier to gets to grips with (see page 8 for guidance on how to present and reference them). These can then be supported by a discussion of the findings. If your research was qualitative, you may want to include case study examples, quotes or vignettes,[1] to bring your findings to life.

**Recommendations**: **Based on your research findings, it is useful to offer recommendations for improvements.** Your recommendations *must* be grounded in your findings. Some of these may come from what your research participants have suggested and others might come from your own analysis. You could offer general, overarching recommendations or you may choose to target different recommendations at different stakeholder groups. Your recommendations could be quite small-scale and very practical; others may be more substantial. Depending on your audiences you may need to be careful how you phrase some recommendations, to avoid being too prescriptive. Using the phrase 'might like to consider' is often useful. For example rather than saying, 'The headteacher needs to invest more in staff training' you could say: 'The headteacher might like to consider investing in staff training, as this may help to overcome the current gaps in knowledge around ICT.'

**Conclusion**: **The concluding chapter or section is often a summary of the findings, supported by the author's concluding remarks.** It is generally quite brief. Conclusions sometimes suggest areas where further research is needed.

There are many different ways of structuring reports. For example, sometimes the sections above will be merged together, or one section could just be a short paragraph. Thinking about what information will be of most interest to your audience, and what they are most likely to read is key to deciding what your report will be like. At the end of the day, most people are interested in your findings and recommendations, so give most space or time to covering these.

If you are not writing a formal research report, you will still need to address most of the areas listed above in your presentation or summary, but in less detail.

Notes

1 Vignettes are short descriptions or scenarios which illustrate a point that you are making and can help the reader to understand the context.

## 3 Writing up your data (your research findings)

How you write up your data will depend on what data you have collected. We offer some suggestions and tips for writing up qualitative and quantitative findings.

### 3.1 Qualitative data

If you have collected *qualitative data* (data which is not based on numbers) then you will probably have analysed the data using codes and sub-codes,[2] pulled together under broader themes (see 'How to run qualitative and quantitative research'). Having these broad themes and sub-themes helps to provide a logical way to write up your data. Each broad theme can form a section heading and sub-codes (or sub themes) can become sub-sections (see example below).

Example

| | |
|---|---|
| Theme 2. | **What worked well about the intervention?** |
| Sub theme 1 | **2.1 Parental engagement** |
| Sub theme 2 | **2.2 Timing of the intervention** |
| Sub theme 3 | **2.3 Support and training given to staff** |

Alternatives to splitting your data by theme, are to divide it by stakeholder, location or setting. For example, if you did your research in two different schools, you may want to write about each separately, pulling together areas of commonality or difference at the end of your report. Alternatively, if you asked a number of stakeholder groups about the same topic, you may want to present what governors told you in one section, what teachers said in another and what learners contributed in a third section.

Your research may lend itself to a *case study* approach. For example, if you have carried out an observation of different classes within your school, you may want to write a summary of each case (or class) in a different section.

However you decide to write up the data, if you have collected interview data, you will probably want to include *quotes*. These help to break up the report and to 'bring it alive'. Short quotes can also help to illustrate a key point well. Make sure you include some indication of who has said it (e.g. was it a teacher or parent?). Remember that the person and the location should be anonymised (unless you have participants' agreement to name them).

**Example of anonymising your data**

A science teacher explained:

*I only let the pupils undertake practical work in my lessons when I have the support of the classroom assistant.*

If you feel the term 'science teacher' may identify the participant, just use the term 'teacher'.

If you have collected data from observations then you may want to include vignettes.

2 A 'code' is similar to a theme; it allows data to be grouped into manageable chunks about the same topic area (or code). An example might be 'training needs of classroom assistants'. A sub-code further breaks down the code (or theme) into even more manageable groups; for example; sub-codes of 'training needs' may be 'in-house training'; 'external training' or 'peer mentoring'

**Tables**: These are used when you want to present numerical data so that you can easily see the number or percentage of people giving a certain response. The numbers in the tables can either be given as percentages or as a frequency (the actual numbers of people responding). If you are using frequencies then somewhere you should also include the total number of people who responded.

When designing a table you need to think about how you set out your data, in particular which is the easiest way for people to read the data? In the example below it made more sense to put the questions down the side and the response categories across the top.

**Table 1. Number of students intending to study AS or A level mathematics and science subjects prior to attending the careers workshop.**

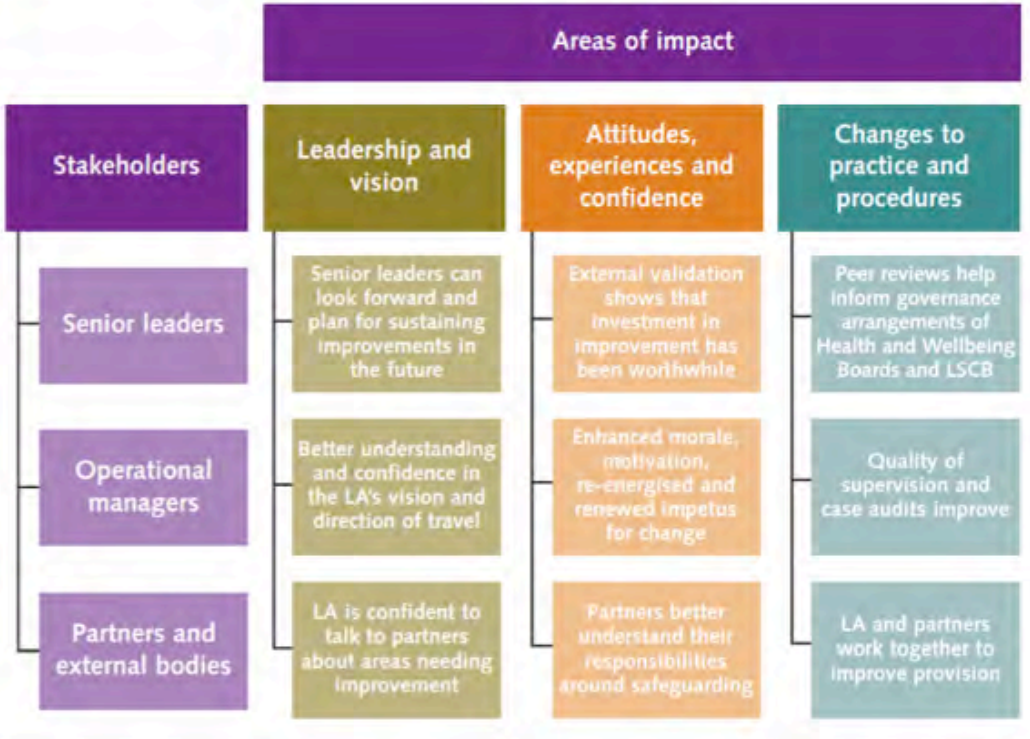
| Before attending the careers workshop to what extent do you agree that you were intending to… | Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree | Total |
|---|---|---|---|---|---|---|
| study biology at AS or A-level? | 23 | 14 | 7 | 5 | 0 | 49 |
| study chemistry at AS or A-level? | 17 | 14 | 9 | 9 | 0 | 49 |
| study physics at AS or A-level? | 26 | 15 | 5 | 3 | 0 | 49 |
| study mathematics at AS or A-level? | 16 | 14 | 6 | 13 | 0 | 49 |

A total of 49 respondents

Source: School survey 2013

Tables are useful if you want make comparisons or include lists. Diagrams can help to illustrate processes and show how different ideas and aspects link together (see example opposite).

**Example: Summary of key messages by stakeholder group**




Source: Easton, C., Martin, K. and Walker, F. (2012). The Impact of Safeguarding Children Peer Reviews (LGA Research Report). Slough: NFER. Available online: http://www.nfer.ac.uk/nfer/publications/LGIS01/LGIS01.pdf [Accessed: 15th September, 2013]

## 3.2 Quantitative data

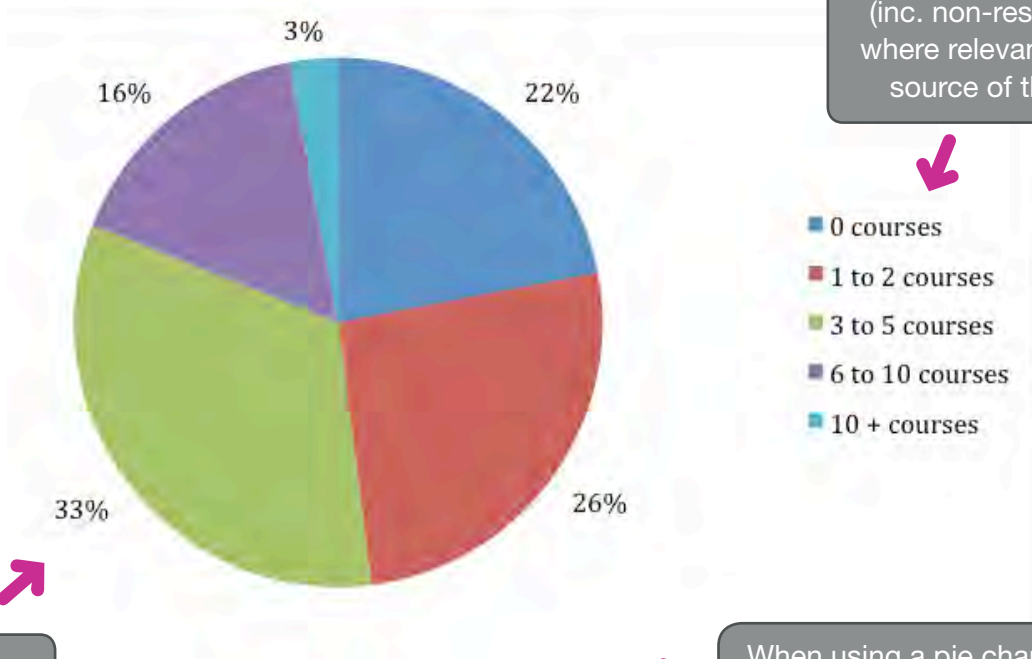
Writing up **quantitative data** (data which uses numbers) can be more straightforward than writing up more narrative, qualitative data. As well as text you can use a variety of charts, diagrams, tables and graphs to make the data easier to understand. Software, such as spreadsheets, will produce these for you at the click of a mouse. Make sure that what you use is appropriate to the data though; charts or grids can sometimes lead readers to misinterpret data through their layout, rather than aiding understanding.

When using charts, diagrams, tables and graphs ensure that they all have a title and display the axes (or key) and numbers of respondents.

Some examples of charts and graphs are shown here.

**Pie charts**: These can show the proportion of respondents in each category.

**Figure 1.1 Number of courses attended by percentage of staff at School A in 2013**




Number of staff responding N = 120

Source: School A staff survey 2013

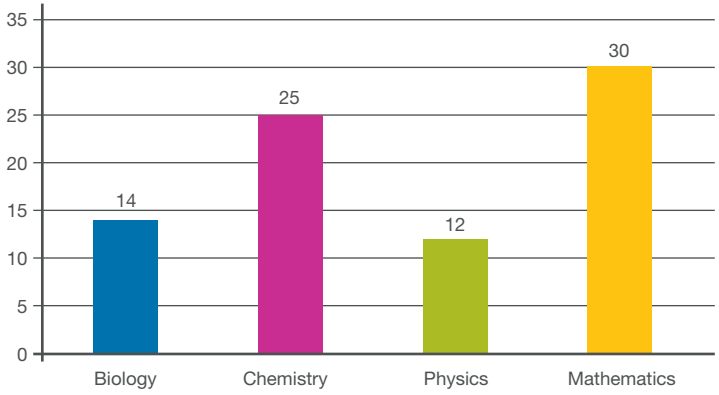
Provide information about the number of respondents (inc. non-respondents where relevant) and the source of the data.

Provide information about the scale so your reader can interpret the data.

When using a pie chart, it is useful to quote the proportions to help the reader interpret the data.

**Bar charts**: These can be used to show the number of responses in each category. They can also be used to illustrate the range of responses, for example in a 'Likert-scale question' or to show how responses from different groups of respondents compare.

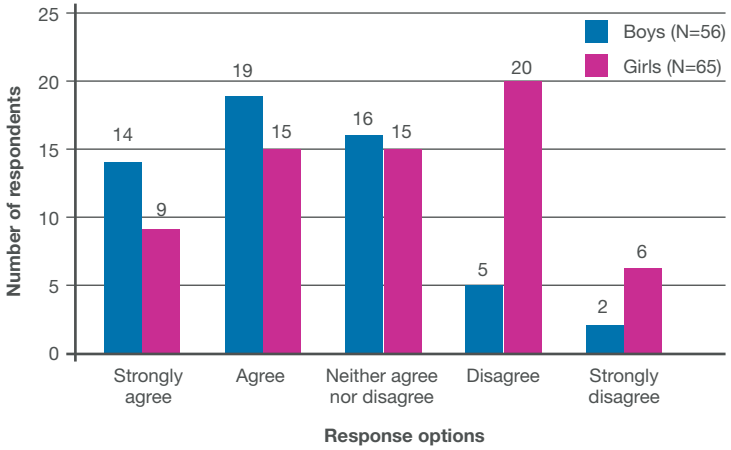
**Figure 1.2 Number of students in Year 12 studying AS Levels in science or mathematics**




N=81

Source: School survey 2013

**Figure 1.3 I feel confident in using graphs in my science lessons**




N=121

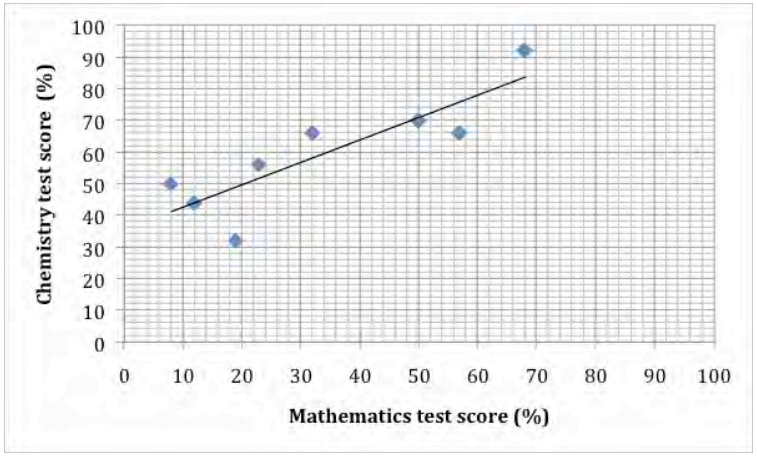
Source: NFER online student survey 2013

**Likert scales and Likert type questions**: These are questions which are designed to measure attitudes and opinions by asking people to respond to a series of statements about a topic, in terms of the extent to which they agree or disagree with them. The bar chart in figure 1.3 shows boys' and girls' responses to the Likert-scale question: *How much do you agree with this statement: I feel confident in using graphs in my science lessons?*

**Histograms**: You can also present your data using histograms or line graphs. Histograms are used to represent the distribution of continuous data (i.e. data that can take any value and is measured rather than counted; such as age or height). Histograms look like bar charts, except that in bar charts the bars are spaced, whereas in histograms they touch.

**Line graphs**: These should only be used when you are displaying continuous data on *both* the *x* and *y* axes. In the example below, the line charts shows how learners' mathematics scores relate to their test scores in chemistry (see Figure 1.4 below).

**Figure 1.4 Mathematics test score against chemistry test score**




Source: School survey 2013

## 4 Writing tips

Many people, including experienced researchers, can find starting to write quite daunting. Writing style is personal and, as with anything, develops the more you do it. Some people plan in detail before they write, others find that their ideas flow better if they sit down and just write. Below are a few ideas and tips that people have found helpful.

- Put aside a period of time each day or week for writing (and stick to it!).
- Use a spider diagram to capture your thoughts and the main themes coming out of your analysis, before you begin writing.
- Read! Looking at other people's research reports can give you ideas for your own. There are many to choose from on the NFER website (www.nfer.ac.uk).
- In the early drafts, do not worry if you cannot think of the appropriate word to use, just put something similar. You can highlight these places and return to them later. What is important is that you keep the flow of what you are trying to say going.
- Be aware that some days you feel able to tackle the difficult sections and other days you can only cope with straightforward tasks; do what suits you.
- When you get a mental block, stop writing. Come back to it later when you feel more able.
- Talk to friends, family, colleagues about your writing. In trying to explain the findings to them you will often clarify your own thoughts.

## Other useful resources

We hope that this short guide to writing up your 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.

# **Write up your research** – some tips to get you started


**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.





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