

Some guidelines for seminar papers and presentations

The purpose of these notes is to provide some guidelines for the preparation and presentation of seminar papers.

Universities offer various events and courses on writing “scientific” texts, many of which have titles such as “Introduction to Academic Writing”. It is useful to attend some such course at an early stage. In addition, there are a growing number of books that aim to teach much the same thing, in all the major languages. They explain how to organize your work, how to use sources correctly, how to design figures and tables, etc.

There are also field-specific guidelines, for economics, mathematics, etc., and even for subfields such as finance. (For example, John H. Cochrane has writing tips for PhD students that are easy to find on the web.) We often recommend such resources to PhD students, but they are useful at much earlier stages.

A general “style guide” can also be useful. Here is a perennial classic:

Strunk JR, White EB (2000). *The Elements of Style*, 4th ed. Pearson.

The first edition dates from the 1930s (!). There are quite a few such resources now, I must have about 10–12 myself. I don’t read them from cover to cover, of course, but they are good for browsing – and you can always learn something useful when you have to write in a foreign language.

The following is also a style guide, but specifically for economics:

McCloskey DN (2000). *Economical Writing*, 2nd ed. Long Grove, Ill.: Waveland Press.

Even better, it is brief, just 90 pages.

Here is a short but famous example from mathematics:

Halmos PR (1970). How to write mathematics. *L’enseignement mathématique*, 16(2), 123–152.

You’ll easily find it on the web.

The message is always that writing is important, in all fields, including quantitative ones. McCloskey (pp. 6-7) explains the idea nicely: “Economically speaking, the production function for thinking cannot be written as the sum of two subfunctions, one producing ‘results’ and the other ‘writing them up.’ The function is not separable. You do not learn the details of an argument until writing it in detail.”

For a seminar paper or thesis, this implies: start early, revise often.

1 Seminar papers

Formal aspects

As you can see from browsing scientific journals, there is no single format that everyone follows. So I will not impose one on you, neither in terms of margins, line spacing, etc. But be consistent. Choose an attractive, easy-to-read font, e.g. 12pt or 11pt Times Roman, leave enough margins for correction . . . and stick to your choice.

In addition, every paper requires a cover sheet, which should contain at least the title, author (and matriculation number), course title and semester, department and the name of the instructor.

Footnotes and citations

For many people, footnotes are still the epitome of “science”. However, in the natural sciences and economics, they are now rather unusual. Here, the so-called Harvard system has prevailed: detailed references are listed in a separate bibliography at the end of the paper, with only short references in the main text, such as “According to Muller (1999), the result is ...”. The reader then looks up in the bibliography, if necessary, what “Muller (1999)” actually is. This system makes footnotes largely superfluous – they usually interrupt the flow of reading and are little more than a collection point for unimportant material of all kinds.

Rule of thumb: if the material is actually important, it must be included in the main text; if not, it has no place in the work.

Figures and tables

are given a title, a legend and are numbered consecutively. They should be self-explanatory. Figures and tables should be referenced in the text.

The Internet

is a useful invention - but it can often only be used efficiently if you already know roughly what you are looking for and also where to find it. Moreover, older literature is often not available in electronic form, and sometimes even its existence cannot be easily determined via the Internet. The era of working with (and *in*) libraries will not come to an end any time soon.

Tools

If you are planning to write your final thesis in statistics or econometrics, a seminar paper provides a good opportunity to learn \LaTeX , if you don't already know it. Many of your textbooks are written using \LaTeX , as are all my lecture notes, exams, and even this document. \LaTeX is a typesetting system (as opposed to a word processor such as Microsoft Word) that is widely used in science and engineering and is practically the industry standard for formula-heavy text. In economics, it is particularly relevant to quantitative methods, economic theory and finance, but not only there. At the research level in these fields, almost everyone under the age of 50 will use \LaTeX when writing a paper.

Data

Data sources must be specified, in precise terms (which variable from which table, not just “OECD (2021)”). For secondary data, e.g. data available from an R package, the relevant package must be cited. Any data transformation or other form of preprocessing must be indicated, see next point.

Reproducibility

In economics (and elsewhere), recent concerns about the reproducibility of results have led to the introduction of new policies in scientific journals regarding the provision of data and/or code along with the manuscript. For us, this means that all computational results must be properly documented. You should therefore expect to submit data – no proprietary formats, please use `.txt` or `.csv` – and code in documented form along with your paper. For the computations themselves, I encourage the use of R, where reproducibility is relatively straightforward via the `Sweave()` function. More recent tools are also available via the `knitr` or `rmarkdown` packages. The latter do not require any knowledge of \LaTeX .

Software

Software and add-on packages should be properly cited. In R, try `citation()` or `citation(package = "AER")` for some examples.

Mathematical texts

In quantitative fields such as statistics, econometrics, computational science or operations research, a certain amount of mathematics is unavoidable. The only successful strategy for dealing with these parts is to understand them as fully as possible. Formula-free texts are usually not free of typos, and this is even more true of formula-heavy texts. A somewhat extreme view of a mathematician (from a textbook on so-called special functions):

Never trust a formula from a book or table; it only gives you an idea how the exact result looks like.

The uncritical adoption of texts containing formulae can only be strongly discouraged.

Notation

In mathematical fields, you will normally rely on a variety of sources not all of which use the same notation. One of your tasks is to create a streamlined presentation that includes a consistent, meaningful notation.

Plagiarism

Each term paper or thesis must be accompanied by a declaration that it has been written only with the specified aids and by the person submitting it. Please read the Dean of Studies' information sheet on this subject. In particular, any thoughts or statements taken from elsewhere must be marked as quotations. However, there is a margin of discretion here: original ideas are certainly quoted verbatim, but for commonplace formulations a general citation of the type "(Meyer 2006)" is sufficient.

Incidentally, there are whole books about plagiarism:

Mallon, T. (1989). *Stolen Words. Forays into the Origins and Ramages of Plagiarism*. New York: Ticknor & Fields.

What else?

It is not possible to cover a subject exhaustively in 15-20 pages. In fact, a certain competence in omitting excessive or 'irrelevant' detail is often a sign of quality.

2 Presentations

Generalities

- The presentation should not be the same as the seminar paper. A term paper gives you the opportunity to go into detail (e.g., technical details in models). In a presentation you should limit yourself to explaining the basic ideas. Accordingly, the formula apparatus should be reduced to the bare minimum. For an optimization problem, for example, this might mean state its formulation and the form of the solution, without going into the derivation.
- A brief outline of the content of the presentation should be shown at the beginning (slide). The purpose of the presentation must be clear. The outline should also be clear to the audience at all times during the presentation.
- Lectures on subjects such as statistics or econometrics are usually quite technical. At least the introduction of the lecture should be fully understandable to all participants.
- If the amount of material is too much for the time available, the quality of the presentation can be judged by whether or not the easy parts have been shortened and the important parts emphasized.
- Always stick to the given time frame.
- Even if you are referring to the screen, always speak in the direction of the audience. Generally, you should also look into the audience.

Slides

- Slides should be relatively empty: large font, little text.
Some recommend the format 7×7 (7 lines of 7 words each) – but I think this is too extreme.
- Whenever possible, use graphics to help convey the material - they enliven the lecture. However, keep the graphics as simple as possible: 3D effects are usually counterproductive, and colours should also be used sparingly (most of the older technical literature is in black and white for cost reasons). Instead, use different symbols, line colours, etc. Be careful with colours that are too bright.
Unfortunately, presentation software such as Microsoft PowerPoint contains a large number of pointless gimmicks.
- Experience has shown that a diagram only conveys the intended information effectively if its essential content can be grasped and understood within 30 seconds.
- Do not use more than one slide per 2 minutes.
- Additional copies should be made of slides that are needed at different points in the presentation.
- Graphics should not be overloaded with detail or numbers.
- Text charts and tables should not exceed approximately 10 lines.
- Use tables sparingly. It is a common bad habit, especially among economists, to include extensive tables of simulation results or estimates in presentations. Apart from the first few rows, the audience can usually not read much. If you absolutely need such tables: 1) distribute a copy of them in advance or 2) use a shortened version for the presentation. It is better to summarize the main results or present them graphically.
- For all types of charts (i.e. text charts, tables and graphs):

- The image area of the slides should be limited to a maximum of 240×200 mm if possible.
- When designing and producing slides, you should bear in mind that that a presentation will be ineffective if the audience in the back rows cannot read the slides with the the slides with the naked eye.

For printed type, bold fonts should be used wherever possible. For the font size the following minimum values should be adhered to: for image titles and headline about 18 pt, for captions, texts and numbers about 14 pt, for indices and exponents about 10 pt, for line spacing $1.5 \times$ character size. For any handwritten elements (if they are needed at all), you should write even larger.

- Landscape format is usually better than long format, especially if you are presenting with a projector.

Finally, a good speaker is able to break (some of) these rules and still give a good talk!