How to write an academic paper

Some general hints

How to write an academic paper

Introduction

A paper should fulfil two separate, but much related functions. Firstly, it is a test of your ability to organise your knowledge on a particular subject and a means of digesting information. As such, it is a tool for active learning. Secondly, it is a test of your ability to communicate your knowledge in a form which makes it accessible to others. A very important skill in management is to communicate effectively with others. One way of doing this is through the medium of a written report. In principle, there is no difference between communicating effectively with your teacher and with your colleagues in a firm. You should therefore approach the task of writing a paper with these two points in mind.

Writing a paper (whether a Master thesis, an assignment or other scientific paper) is different from writing letters or an essay. It is different because it requires a certain structure and style and because there is more emphasis on logic, clarity and contents than for other types of written texts.

This short note intends to give you some ideas and hints that hopefully will lead to improved papers and a better MBA thesis. At the end you will find some references that contain more about the subject. It is recommended that you spend some time and effort in learning how to write a good paper. This note should give you the first ideas; the rest is up to you.

The overall structure of a paper

It is important to remember that in any paper, but especially in a scientific paper, structure is vital: a poorly organised paper means that you are not communicating effectively.

A paper essentially consists of three parts:
* Introduction: Background and selection of theories
* Main part: Discussion of problems and application of theories or reasoning
* Conclusions: The main points are emphasised and the paper is put into perspective

In addition the paper may have a foreword, a list of contents, a summary, a list of references and one or more appendices. For larger papers the various parts may be

further divided into sections. Sometimes it is useful to number the parts and sections to add more structure to the paper (see more about that below). A complete paper may have (but need not have all) the following parts:

- Foreword/executive summary
- Contents
- List of figures and tables
- Introduction
- Discussion
- Conclusions
- List of references
- Appendices

The introduction section

The two main purposes of the introduction is to state clearly what the problem at hand is all about and what theories, literature sources and other background material you have chosen as help to shed light on the problem. The selection of background material should be adapted to the purpose of the paper and this purpose should be obvious to the reader after having read the introduction.

The introduction should

- be short
- be to the point
- not compete with the discussion
- make the purpose of the paper clear

The introduction part of the paper is one of the most critical parts of the paper as it explains the purpose and rationale behind the paper (the back-bone of the paper) In its essence it "sets the scene" for the work presented. The introduction contains a number of formal matters that are expected to be included and mastered by the students and therefore also a crucial part of the overall evaluation of the work performed.

To re-iterate and extend the above formative explanation, the introduction part of the paper consists of:

1) <u>Problem identification/explanation/rationale for the work performed</u>: Why is the problem important to be discussed?

2) <u>Problem description and narrow down to present the objective of the paper</u>: What aspect(s) of the problem is/are to be discussed in this paper? (Please consider the perspective of the module.)

3) <u>Limitation of the paper</u>: What is included and excluded from the discussion? (Narrowing the scope of the paper.)

4) <u>Methodology</u>: How is the problem going to be solved? (Statement on the general solving approach and later specification on data gathering and analysis.)

5) <u>Data and data reliability</u>: What kind of specific data has been analysed and how? (Presentation of the specific data analysis approach so that another person is able to able to arrive at the same conclusion through the presented data analysis.)

The introduction section should include a reading guideline providing an overview and short explanation to the dispositions and main sections of the paper.

Analyses/discussions

This part contains three main elements:

1) The development of the solution to the presented problem based on theories relevant to the module and subsequent empirical findings.
2) The discussion of the relevance of the findings to the problem at hand.
3) The forming of conclusions.

This part must normally be divided into many different sections, which require careful planning and thinking. The clue is to offer the reader a sequence of logical reasoning leading to the conclusion (e.g. through headlines/story boarding). The structure of this main part is the essence of the paper and will be further discussed below.

The conclusion

The conclusion section provides the answer to the problem stated in the introduction section. It simply answers the question stated in the introduction. The conclusion section is where all threads are collected. From the discussion a logical conclusion to the problem should follow. One conclusion could of course be that one cannot say anything specific in one way or the other, simply because the evidence or the theories have conflicting elements. Whatever the conclusion is, however, it should follow logically from the previous part of the paper.

The writing process

One may say that writing a paper requires that you expend two different types of energy: CREATIVE and CRITICAL. Don't attempt to use both at the same time!! A good paper is normally the result of a good plan, so the first thing you do is planning the process. Look at the calendar, start counting backwards to divide the allowed time into sections (see below). Set target dates NOW for each section.

1. Creatively choose your topic or identify the purpose of the paper
2. Critically narrow your topic
3. Creatively collect your ideas and data
4. Critically organising your ideas and evaluating the material and data
5. Creatively get your ideas down on paper
6. Critically revise your rough draft
7. Creatively smart up the layout of the paper, fine tune the language

1. Creatively choose your topic or identify the purpose of the paper

Step 1 is very important, because very often papers are written without a full understanding of the exact purpose of the writing. If you can choose your topic freely yourself, choose one that interests you, or one that may be relevant for your job situation. If you are given a specific assignment, make sure that you really understand what is expected from you.

You should really spend time thinking about the specific contents of your paper. You should try to make the topic broad enough to address an important issue, but is must also be narrow and specific enough to allow you to bring it to conclusion within the time allotted.

2. Critically narrow your topic

The number one mistake students make repeatedly is to underestimate what you can handle, by choosing two broad or over-ambitious papers.

Think carefully about the limitations of your particular situation. Don't choose a problem that will require more data collection and reading than you have time for. The title should reflect the contents of the paper in a clear way. As an example, if you are about to write a paper on short sea shipping and environmental impacts, then a title like

"Short sea shipping and the environment"

really is not good, as it is a very general description of a subject area, and it does not tell anything specific what your paper is particularly addressing. If the title had been:

"The environmental profile of European short sea shipping vs. road transportation",

then it is stating clearly what the reader can expect to find when reading the paper.

3. Creatively collect your ideas and data

Once the topic and the title have been carefully selected, the next step is to collect background material. Before you start digging for information you should try to generate ideas about the subject. Brainstorm, write down ideas as soon as they pop up, talk to librarians, colleagues, friends who might give you ideas.

It is normally not enough just to read through the material and then start writing. After having read the basic material (which is often defined by the person giving you the paper topic) you should ask yourself many times whether more information should be collected.

The next really important step is to ask yourself the questions:

Is this material really relevant to the problem at hand?
Why is it relevant?

After having done this with each source (taking notes as you go along), more steps follow. You should try to make up your mind as to whether the material gives a balanced view or not or if you need more and other types of information. Then follows the evaluation of what you have decided is the most relevant information. This evaluation should identify biased sources and whether information from different sources about the same subject is comparable. At this stage you could suitably write a summary of the literature findings.

4. Critically organising your ideas and evaluating the material

Make an outline of the paper. This is essential. There is no better way. Have someone commenting on your outline. Sleep on it and revise.

The purpose of the outline is to mentally sort your material and group the information in logical segments. You decide on the structure of the paper by assigning the headings for the disposition. The material should be grouped in cohesive segments and arranged into a sequence that can help the reader to see the logic and to understand your conclusions. There is no fixed way of dealing with this problem. You can deal with a subject geographically, chronologically or by logical subject group. An example may clarify some of the issues involved[1]. An international group of bank officers was given 30 disconnected points regarding the economic situation in Greece in a given year and were invited to write a report on the basis of this information. Six of the many outlines put forward are reproduced below:

(A)
OVERVIEW
ECONOMIC OVERVIEW
PUBLIC EXPENDITURE/BUDGET
BALANCE SHEET

(B)
COUNTRY OVERVIEW
ECONOMY
   Employment
   Energy
   Monetary
   International Trade
   Tourism

(C)
BALANCE OF PAYMENT
INTERNAL ECONOMIC
SITUATION
   Production and consumption
   Budgetary and Monetary Policies
   Statistics
OUTLOOK

(D)
COUNTRY OVERVIEW
   (INFRASTRUCTURE)
EMPLOYMENT
ENERGY
MONETARY
INTERNATIONAL TRADE
TOURISM

(E)
POPULATION
COMMUNICATION
EMPLOYMENT
GNP
ENERGY CONSUMPTION
INVESTMENTS
FISCAL POLICY
MONETARY POLICY
BALANCE OF PAYMENTS
   Goods
   Services

(F)
ENVIRONMENT
   General
   Economic Survey
GOVERNMENTAL POLICY
   (Local) Internal Situation
   International Relationship
INTERNATIONAL TRADE
   Oil
   Tourism
   Export/Import

Outline (A) is very simple, but all the headlines are too general and give little guidance to the user. To have first a headline called 'Overview' followed by 'Economic Overview' is bad - the first headline must be distinguished more clearly from the other. The rest of the outline indicates an accountancy approach to the

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[1] The example is described in greater detail in (Mort, 1992).

problem, where the national budget is compared with the way the economy performs. This might be OK, but then the main headlines need a further breakdown.

Outline (B) has only two parts - an overall overview followed by 'Economy', which is, in fact, the subject of the whole report. The outline becomes imbalanced because the main grouping of the subjects is too broad.

Outline (C) uses the balance of payment as the overall guide to the study of the Greek economy. This might also be a valid approach. One of the subtitles is confusing, though, namely 'Statistics'. It is hardly appropriate to segregate statistical information in this way, and one suspects that the term is being used as a repository for miscellany that will not fit under the other headings.

Outline (D) uses a straightforward division into six main headings, which creates more balance as each part becomes a logical type of similar nature. The term 'Monetary', however, is too general and broad in scope compared to the others.

Outline (E) is then better because it has more first-rank headings. In this approach the 'Balance of payments' is only one out of many items, which gives a much clearer picture of what the report is all about.

In outline (F) the material has been divided into three clear segments and broken down further in a helpful way. One should avoid headlines that necessitate bracketed information. The word 'Local' in this context adds nothing to the signpost.

Generally there are many ways to organise the material. In this example a combination of (E) and (F) would probably give a good structure for writing about the Greek economy. The examples, which are real, show clearly how different persons approach a problem in different manners. The overall guidelines for the outline are:

- Group the material in logical segments of equal importance
- Sub-group each segment by using clear and unambiguous breakdowns
- Avoid groups like 'others' or similar headings for miscellany

5. Creatively get your ideas down on paper

When the first outline of the paper is ready, you should start writing the main part as soon and quickly as possible. After you have sorted out the material in your head it is important not to wait with the writing. A good approach is to gather all your notes and write a quick and very preliminary first draft without worrying too much about spelling and grammar and then leave it for a day or two before starting the revision process. This is much better than trying to write the final version painstakingly from A to Z. As you start writing, you will normally find it natural to revise your outline as well.

The introduction and the conclusion are better written at the end of the writing process, because it is only at this stage one knows exactly what the conclusion is and how the logic of the total paper came out.

If you "freeze" – talk your ideas to someone real or imagined or to a tape recorder and play it for yourself.

6. Critically revise your rough draft

Make sure you have planned the process so you have time for this important step!

Now is the time to recheck the organisation of the paper – is it really having a logical structure? Then look for unity – do all the paragraphs really contribute? Are all your arguments substantiated? Start checking sentence structure and your choice of words. Read aloud – tape it and play it – do you like what you hear?

If you have time for it, it is always a good idea to ask your group members to quickly read your paper and comment on it. You normally go "blind" on your own text after a while, fresh eyes may point to areas of improvement.

Some find is useful to use checklists in this critical phase of writing, one for contents and one for semantics and style.

Checklist for contents:
1. Is my paper statement concise and clear?
2. Did I follow my outline? Did I miss anything?
3. Are my arguments presented in a logical sequence?
4. Are all sources cited to ensure that I am not plagiarising?
5. Have I proved my points with strong supporting arguments and hard facts?
6. Have I made my intentions and points clear in the essay?

Checklist for semantics and style
1. Did I begin each paragraph with a proper topic sentence?
2. Have I supported my arguments with documented proof or examples?
3. Any run-on or unfinished sentences?
4. Any unnecessary or repetitious words?
5. Varying lengths of sentences?
6. Does one paragraph or idea flow smoothly into the next?
7. Any spelling or grammatical errors?
8. Quotes accurate in source, spelling, and punctuation?
9. Are all my citations accurate and in correct format?
10. Did I avoid using contractions? Use "cannot" instead of "can't", "do not" instead of "don't"?
11. Did I use third person as much as possible? Avoid using phrases such as "I think", "I guess", "I suppose"
12. Have I made my points clear and interesting but remained objective?
13. Did I leave a sense of completion for my reader(s) at the end of the paper?

7. Creatively smart up the layout of the paper, fine tune the language

The final touch would be to take another look at the layout of the paper – does it look good on the paper (choice of fonts, sizes, clarity of graphs and illustrations etc.)? Then check again the spelling and the grammar. Most modern word processors have included spelling and grammar checking. You should also check your style. Avoiding both very long and telegram style sentences, you could check your text for readability and try to revise it if it is too complicated.

HAND IN YOUR PAPER!

## A note on searching for background material

The electronic libraries that CBS is offering include a lot of electronic databases, therefore, the CBS library search is the very best starting point for your material search.

Throughout the process of searching for and reading material, the best advice is that you write all the time. Make notes about main findings and sources. You will find that you can cut and paste a lot this directly into your paper later, and it makes it much easier to keep track of sources of relevance.

The reading process is not really separate from the writing process.

Time planning

If you are not used to paper writing, the writing process will take much time. With time limits you will definitely be pressed for time. This is part of the test - you must learn to plan your use of time. As a very general rule of thumb, the writing process consists of four phases, each taking up a quarter of the available time. You should use this as your overall guide for the writing process. It could be illustrated as follows:
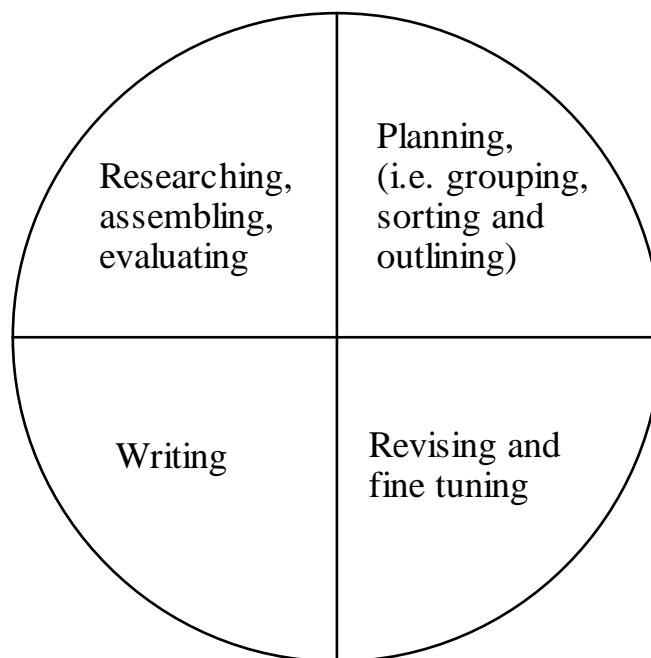
Normally much too little time is devoted to the two phases on the right hand side of the circle; most of the time is spent on the reading and the writing. You should be aware of this tendency and devote sufficient time both to planning and to revision of the manuscript.

The use of numbered headings

The normal way of structuring a text is to use Arabic numbers (1,2,3) in front of the heading. Each first-rank heading is given a new number. If the heading has a sub-division, it is indicated by a new sequence of numbers after a punctuation mark, i.e. 1.1, 1.2,1.3 etc.

If you end up with more than three levels of sub-titles, i.e. 4.3.2.1, this normally indicates that your outline requires revision. Three levels (i.e. 5.1.1) should be the maximum, even for long papers.

The use of references

You should always refer to the material you are using by clearly stating the source. This could be done in the text by including the name of the author and the year of the publication in brackets, i.e. (Norman, 1992). At the end of the document a complete list of sources should follow. There are several ways of writing a reference list. An example of a typical way of writing references is:

Abrahamsson, Berhard J.: "International Shipping: Developments, Prospects and Policy Issues", *Ocean Yearbook 8*, Chicago and London, University of Chicago Press, 1990, p. 158-175.

Baldwin, Richard: "The growth effects of 1992", *Economic Policy*, 1989, p. 239-281.

Cafruny, Alan W.: *Ruling the Waves. The Political Economy of International Shipping*, Berkeley, 1987

Cashman, John P.: "Shipping Statistics: 'Who owns the fleet?'", in Strandenes, Siri P., Arnljot Strømme Svendsen, and Tor Wergeland (eds).: *Shipping Strategies and Bulk Shipping in the 1990s*, Bergen, 1990, p. 73-85

CEPR: *Monitoring European Integration; The Impact of Eastern Europe*, London, Centre for Economic Policy Research, Annual Report, 1990.

Here the presentation is alphabetically by author. The actual publication where the text appears should be either in italics or underlined (book, report, journal). If the text is only a part of a larger publication, the name of the article or text should be in quotation marks. The reference should contain the name of the publisher (if it is a book or a report), the place of publication and the year. More specific references could be made by adding the page numbers in journals or books.

A special problem arises if the source does not have an author. The normal solution is to use the source publication as author.

Fairplay: "Making of a monster: Maersk swallows Sea-Land", July 29, 1999, p. 19-21

A lot of your resources will be found on the Internet, and again the text will have no author. Normally the company or organisation behind the web-site is used as author, and the URL is given as source:

> Mediterranean Shipping Company: "30 years. Some Facts", retrieved July 28, 2000 from *http://www.mscgva.ch/marketing/index.htm*

The use of appendices

The appendices will contain material that is relevant but not necessarily important for the overall discussion presented in the paper.   A paper should be fully read and understood independent of referring to the appendices.

The language and style

You should avoid very long sentences as well as telegram style. Short sentences with as few difficult words as possible will make the text more readable. There are some tests of readability that might be used. The most common test is to calculate what is known as the Gunning's Fog Index. This is so called because it tells you how "foggy" your text is. The answer you get in using the formula tells you roughly how many years of schooling someone will need to read your text with ease. To calculate the index you choose a sample of 100 words.

To make sure you get a representative sample, you should repeat the calculation, say three times. You should then choose 100 words from the beginning, the middle and the end of your text. Avoid, however, the extreme beginning and end as these parts of a text are often written in a different style.

The calculation is as follows:
Count 100 words (like in the first paragraph of this sub-section). Divide this by the number of sentences, which gives you the average sentence length. (In this case 100/7=14,3). Count the number of words with more than two syllables (do not count words with capital letters, do not count words combining short and easy words (e.g. book-keeper) or words that are made into three syllables by adding -ed or -es (e.g. expected, services). In this case the number is 10. Add the two numbers and multiply by 0,4. In this case this gives (14,3+10) 0,4= 9,7, which is a fairly easy text. If the index approaches 15-20, you should either write shorter sentences or use simpler words, or both.

Another test is to count the number of nouns and adjectives in your sample of 100 words and express these as percentage of the total words. If the number is over 50%, the text is too dense and difficult, if it is between 30-50% it is of average difficulty and if it is below 30% it is very easy to read.

The use of direct quotations from other authors or sources should be limited as much as possible. Generally speaking, it is recommended that you shun long quotations like the plague. It is much better to rephrase the argument in your own words, giving a reference to the source. If you do feel that a short quotation from a source is absolutely necessary, place the quotation in quotation marks " ", or give it in *italics.* Always give a precise reference to a quotation, including the page number where it is to be found. If you choose to give references in brackets ( ), reserve the use of footnotes for detailed clarification of points or additional information or clarification not strictly necessary in the main body of the text.

If you are not used to writing English, the best recommendation is to read as much English as possible and to read a text that can give you some hints on what to avoid when writing English. A good example is the Style Guide from The Economist (The Economist, 1991), which is a most useful help in writing modern English.

References

Wainwright, Gordon: *Report Writing*, Management Update, London, 1984, 108 pages

Mort, Simon: *Professional Report Writing*, Gower Publishing Co. Ltd, Aldershot, 1992, 222 pages.

The Economist: Style Guide, The Economist Books Ltd., 1991, 144 pages

Strunk Jr., William: *Elements of style*, 4th Edition (see website www.abacon.com)