

Technical writing is the process of presenting the results of a research project or homework assignment in a clear and concise manner. The aim is to present what you did, how you did it and the results you obtained and clearly indicate these areas in a coherent manner.

Technical writing is significantly different than other types of writing, but tends to be easier to do since there is no interpretation or subjective judgements to make,

This is a brief summary of ideas to keep in mind when writing technical reports.

Outline of a Technical Report

- 1) Introduction - state what you are trying to demonstrate with this report. Depending on the nature of the research, you also may state why you are doing it.
- 2) Implementation - this section includes the details of how you conducted your research and what tools you made use of (programming languages, computer hardware used, *etc.*).
- 3) Results - this section is a straightforward presentation of the results you obtained. This can include graphs, tables, charts and sample computer output.
- 4) Discussion - this section is used to discuss and draw conclusions from your results.
- 5) Appendicies - this is where you place material that is nessary to fully understand your report, but detracts from the main flow of your paper. Items such as program listings, sample program runs, *etc.* should be placed here.

While it is possible to combine the above sections in various ways, it is usually much easier if you stick to the above outline.

General Hints on Successful Technical Writing

This is a description of things to keep in mind while you are writing a technical report.

- 1) Type your report in a word processor. Hand written reports can be very difficult to read.
- 2) Write in the 3rd person (*i.e.*, no instances of the words I, we, he, she, *etc.*). Write from the point of view of an anonymous observer looking over your shoulder.
- 3) Be as quantitative as possible. If you have actual numerical data available to illustrate your point, use it.
- 4) Use proper grammar (punctuation, subject-verb agreement, complete sentences, capitalizations).
- 5) Your report should be reasonably self-contained. Someone reading your report should have a fairly good idea of what you are doing and your methods without actually having to read the homework assignment sheet.
- 6) Use proper mathematical symbols where appropriate. This means making use of the Equation Editor in MS Word.
- 7) Set off items such as variables, programming variable names and websites in a different font.
- 8) There are various styles you can use (format of section headings, fonts, *etc.*). Pick a style and be consistent throughout your report.
- 9) Try to be concise. Do not include large amounts of extraneous details.
- 10) Do not make claims or conclusions that are not supported by your experiments. If you are not certain of the reason for a result, state that your conclusion is speculation or a conjecture.
- 11) Make sure you cite all sources that are not your own.
- 12) Present your results in a clear, orderly fashion. Do not make your reader go hunting for them.

General Hints on Grammar

- 1) Don't invent words. Use a dictionary when you need it.
- 2) Avoid repeating the same word several times in close proximity. Use a thesaurus for alternate word choices or reword your sentence.
- 3) One medium length sentence is generally better than several short ones.
- 4) Long sentences are fine if they read well.
- 5) Don't use colloquial (slang) words or phrases. If it's something you might say as the 12th Annual Drunken Barn Dance, it probably should not be in your report.
- 6) Use the words 'much' and 'more' sparingly.
- 7) Don't start a sentence with 'since' or 'because'.
- 8) Use words properly. For example, '100 people were evacuated from a burning building'. It is the building, not the people, that is being evacuated (unless you are in a horror movie).
- 9) A dangerous phrase to use is 'the results were as expected'.
- 10) Here is a list of words to avoid: really, totally, huge, a lot, pretty, got, thing Suggested alternatives: very, completely, large, many, very, have, item.

Supporting Materials

In this section the abbreviation TFC refers to Tables, Figures and Charts.

- 1) TFC's should have proper annotation (axis labels, titles, captions).
- 2) Each TFC should (almost) explain itself.
- 3) Each TFC should be numbered in a consistent manner.
- 4) Each TFC that appears in your report should be referenced somewhere in the body of your report.
- 5) When referring to a specific item, the reference should be capitalized (*i.e.*, Figure 9 shows..., Table 10 illustrates...).
- 6) Item 5 also applies to cases in a case analysis ((*i.e.*, Case 3 contains..., Case 2A shows...).
- 7) If you are performing a case analysis, clearly indicate what differentiates the various cases. If your cases have several attributes in common, state these first before beginning to differentiate the cases.

Here are some online links that you can use for additional information on technical writing.

Online technical writing guide

<http://www.io.com/hcexres/tcm1603/achtml/acctoc.html>

Links to other sites that may be useful

<http://www.ruthvilmi.net/hut/LangHelp/Writing/#technical>

<http://www.frostburg.edu/dept/engl/gartner/techwrit.htm>

101 Writing Tips (slow link, but funny)

<http://www.maths.strath.ac.uk/aas96106/tips.html>

Online dictionary and thesaurus

<http://www.m-w.com>

Computer Jargon Dicitonary (BIG file)

<http://www.tuxedo.org/esr/jargon/jargon.html>