

# 8 - Technical Report Writing

## What is a Report

A report is a means of communication that has been written for a specific purpose and is aimed at a specific audience. It is more structured than an essay and is presented in a way that enables it to be read quickly.

## Differences Between Research Paper and Report

- Purpose - convince vs. information - Report are simply for the purpose of providing information about a situation or phenomenon, however, research is to test the hypothesis based on rationale
- Question based vs. topic based
- Has a clear arguable thesis vs. general discussion
- Using data and ideas as evidence to support your position vs. summarizing information which has been gathered
- Analyzing and interpret information vs. presenting analysis and interpretation
- Unique perspective and conclusion vs. does not result in new knowledge

## Different Types of Reports

- There are many different types of report each of which has a different format and emphasis. For instance,
  - There are laboratory reports, which generally describe an experiment that has been undertaken
  - Under the umbrella terms of technical reports there are, for example, primary research reports, technical-background reports, technical specification, feasibility reports, proposals and business plans.
  - Regardless of the type of report common sense should prevail and you need to adapt your writing to suit your potential audience and the specified requirements

## Technical-Background Report

It provides detail about a particular topic, for example: the spread of Japanese Knot wood, mobile phone technology or coastal erosion. A technical background report on coastal erosion would not contain references to every mathematical paper that has been written on water waves. What it would contain is enough information to enable a particular audience to use the

information for their own needs. For instance, if a group of engineers were looking to build a sea defense they would need detail of the time scale involved and the force of the waves but not detailed pages of wave theory

## **Feasibility Report**

This report is the result of an investigation into a particular project or idea to determine its feasibility. The report will detail findings such as whether the project is technically possible and feasible.

## **Primary Research Report**

Primary research is the term used to describe experiments and surveys. In this type of report you extend the laboratory report by explaining the background to the experiment, your methodology and the facilities.

## **Technical Specifications**

This report details a new product design and gives information appertaining to the product construction, the materials used and the product itself including its functions, features, operation, and potential market. A specification is not a flowing piece of writing; it tends to be fragmented with lists and tables replacing sentences.

## **Proposals**

Some proposals, such as a bid in the real word, for the Millennium Dome or the National Lottery are extremely lengthy. Nevertheless, as a student you may be asked to write a short proposal as an assessed piece of coursework.

## **Business Prospectus**

This form of report is a proposal that may detail plans for starting a business venture or extending an already established business. It will contain information about the proposed business and provide details about the market place, anticipated share of the market, other established businesses who you may be competing with for a market share.

## **Structure**

- Headings
- Title Page
- Summary and Abstract
- Content List

- Introduction
- Main Body of the Report
- Conclusion and Recommendation
- References
- Acknowledgement
- Appendices

## Headings

- A technical report should contain the headings described in subsections

## Title Page

- The title should be as long as is required to accurately describe the work and inform a potential reader of the content
- Name and ID number should be included and it is likely that module code, course and the date also need to be included

## Summary or Abstract

- This summarizes the contents of report. It should include the purpose of the report, details of what has been done, how it was done, the main findings, the conclusions that were reached and any recommendations that you make
- The abstract must be concise yet informative, its purpose is to enable a potential reader to decide if they want to read the whole of your report, is your work relevant and of interest to them. It should not exceed one page or a give word count in length. You will write this after you have completed the rest of your report. To write this summary/ abstract, it may be helpful if you first summarize the main points you made in each section before combining them into as brief as possible piece of writing

## Contents List

- This shows the structure of the report
- It lists each section and sub-section in numerical order. A list of illustrations (broken down into two sections, namely tables and figures) must also be included
- A figure is a graph or an illustration whereas a table is exactly what its titles says
- The references are considered to be part of your report and the item heading 'References' is listed in the contents
- The last item in the contents list is the appendices. Page numbers for each section, table etc. must be included

# Introduction

- This section provides an introduction to your work and it should also include your terms of reference (or brief) and a general background to the subject area of the report with references made to others who have worked in the area.
- This enables you to show that you have read about your subject and are aware of current work in your particular field. The introduction should detail not only the back ground to your research but also put into context why your work is useful and the particular problem that is to be addressed.
- The introduction is also the place for you to signpost your work, explain what you intend to do, how you will do it and how your report will be structured

## Main Body of the Report

- The main body of your report is likely to contain a methodology, results or findings and a discussion
- Methodology - This section explains how you carried out your work. For example it will detail the particular research methods you used, why you used a particular method (justification) and how you analyzed your findings
- Result or Findings - This section is where findings are presented, as concisely and clearly as possible, with little discussion or analysis. Graphs, charts or diagrams may help your audience to focus on the results you are presenting. These illustrations may be interspersed throughout the text at convenient points or placed at the end of the main body of the report. It is important that this section is well structured to enable your readers to follow through your work. One word of warning - avoid complicated statistics unless you are competent in this area. It is possible to produce an excellent report without recourse to statistical analysis. Your results and findings may well be split into several sections of each of which may contain subsections.

## The Main Body

- Discussion - This section discusses the result you have obtained and reported
- For example, were the results an anticipated or were they unexpected? You can now analyze your data and interpret your results. For instance, was the technology you used of a high enough specification to enable your results to be of a particular accuracy? If there are any unexpected results or discrepancies you should suggest reasons why these have occurred. Were there any time or funding constraints? If so you should mention this in your discussion - this ensures that those who read your report are aware of any shortcomings that may. It will also remind you not to make any exaggerated claims about your findings. It is important that you present a realistic interpretation of your results, link them to is important that you present a realistic interpretation of your results, link them to what you

were aiming to discover and if appropriate compare these findings to those of others. This is an opportunity to refer back to what you said in your introduction. Remember to refer back to your original brief, it is important that you either show that have done what was required or explain the reasons for inconclusive or unusual results

## References

- The references section is the final part of your report that is included in the word or page count if one has been given
- In the introduction, a particular experiment or result may have been referred to with the name of the author, date of publication and page number included
- In the references sections information (in a prescribed format) must be listed. This will ensure that anyone who reads your report and wants to see the material you have cites will have enough information to be able to find it. Included in the references are all the sources of information that you have referred to in your report.

## Conclusions and Recommendations

- In your conclusion you will need to explain how your findings address the task or objective that you were posed.
- Your conclusion should not contain mention of any result that have not already been presented
- The aim is to draw out possible implications from your findings and to present them clearly and succinctly
- Point out what you have achieved. You may also make recommendations for future work, this is particularly useful if your own results were inconclusive. For example, you could suggest that your work is repeated with more sensitive equipment, over a longer time scale or with more funding

## Acknowledgements

- This is where you acknowledge any help and support you have received whether from your supervisor, colleagues or external bodies. For instance, you may have been loaned a piece of equipment, you may have received technical support or financial help

## Appendices

- The appendices appear at the end of your report and are where you place supporting information such as memos and questionnaires
- This ensures that your actual report contains the most relevant material but the opportunity to view all the material is available to those who want to avail themselves of it.

- You may have more than one appendix and these may be labelled in an alphabetic or numeric system (but not a combination of both), for example Appendix 1, Appendix 2 or Appendix A, Appendix B.
- It must be possible to understand the report without recourse to the appendices. The appendices should not contain any material that has not been previously mentioned in your report. Example 1: in your methodology you could discuss the questions that are to be posed then mention that the questionnaire may be viewed in Appendix A.