The University of the West Indies
St. Augustine

The Faculty of Engineering

Report Writing and Presentation Workshop

Facilitator: Ms. Halcyon Lawrence
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Technical Report Writing and Presentations

Objectives
- Identify Elements of Good Technical Communication
- Identify Elements of an Effective Report
- Identify Elements of a Technical Report
- Develop skills for Technical Presentations

Elements of Good Technical Communication
- **Clear**
  - Unambiguous
  - Exact meaning conveyed
  - Symbols fully defined
  - Figures and tables easily understood
- **Concise**
  - Omission of irrelevant data
  - Try to answer the Who, what, Why where and the How
  - Be careful not to oversimplify
- **Continuous or Complete**
  - Appropriate Grammar
  - Well placed illustrations
- **Objective and honest**
  - Clearly list restricting conditions
  - Evaluate data honestly
  - State deficiencies of your research
  - Clear assumptions
• Remember your readers will be persuaded by facts not OPINIONS

✨ Appropriate writing Style

• Active vs. Passive Voice
• Write Naturally
• Use words to convey the appropriate meaning
• Avoid technical jargon
• Define jargon if necessary

✨ Guide your Reader

• Tell readers what you plan to tell them (Introduction).
• Then tell them (main text).
• Finally tell them what you told them (Summary of Results or Conclusions).
• State you purpose clearly
• Get to the point
• Emphasize major ideas
• Separate Fact from Opinion

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Managing Report Writing

✨ Four Phases

• Gathering Data
• Analyzing and sorting results
• Outlining Report
• Writing and Revising the Report
Data Gathering

- Identify framework
- Preliminary outline
- Maintain orderly records of findings
- Keep ongoing list of references
- Consider how data can be displayed
- Find out what existing literature says about the topic

Analyzing and Sorting Results

- Write down significant results
- Group and classify in order of importance
- Select only what is relevant
- Preparation of tables and figures

Outlining the Report

- Write a de-limiting sentence (scope)
- Consider main heading use in reports
- Identify main and supporting ideas in relevant sections

Writing the Report

- Writing using the scientific logic method
- State the problem
- Form the hypothesis
- Observe and experiment
- Analyze the data
- Draw conclusions
Parts of a Technical Report

- Abstract or summary
- Acknowledgements
- Title page
- Table of Contents
- List of figures graphs and tables
- Introduction
- Body
- Conclusion
- Bibliography
- References
- Appendix (es)

**Informational Abstract**
- Communicate contents of reports
- include purpose, methods, scope, results, conclusions, and recommendations
- highlight essential points
- are short--from a paragraph to a page or two, depending upon the length of the report (10% or less of the report)

**Descriptive Abstracts**
- tell what the report contains
- include purpose, methods, scope, but NOT results, conclusions, and recommendations
- are always very short--usually under 100 words
• introduce subject to readers, who must then read the report to learn study results

**Qualities Of A Good Abstract**

• uses one or more well-developed paragraphs, which are unified, coherent, concise, and able to stand alone

• uses an introduction-body-conclusion structure in which the parts of the report are discussed in order: purpose, findings, conclusions, recommendations

• follows strictly the chronology of the report

• provides logical connections between material included

• adds no new information but simply summarizes the report

• Is intelligible to a wide audience

**Steps For Writing Effective Report Abstracts**

• Reread your report with the purpose of abstracting in mind. Look specifically for these main parts: purpose, methods, scope, results, conclusions, and recommendations.

• Write a draft. Do not merely copy key sentences from your report.

• Revise your rough draft to correct weaknesses in organization and coherence, drop superfluous information, add important information originally left out, eliminate wordiness, and correct errors in grammar and mechanics.

• Carefully proofread your final copy.

**Introduction**
- Statement of Subject
- Statement of Purpose
- Statement of Organization and Scope
- Literature Review

**Why a Literature Review?**
- Demonstrates that you know the field.
- Justifies the reason for your research. You have also to be able to convince your reader that what you are doing is important and needs to be done.
- Allows you to establish your theoretical framework and methodological focus. Even if you are proposing a new theory or a new method, you are doing so in relation to what has been done.

**Plagiarism**
- To avoid plagiarism, you must give credit whenever you use another person's idea, opinion, or theory;
- any facts, statistics, graphs, drawings--any pieces of information--that are not common knowledge;
- quotations of another person's actual spoken or written words; or
- Paraphrase of another person's spoken or written words.

**Strategies for Avoiding Plagiarism**
- Follow the Appropriate Style Manual for Referencing of Work
- Put in quotations everything that comes directly from the text especially when taking notes.
- Paraphrase, but be sure you are not just rearranging or replacing a few words.
• Check your paraphrase against the original text to be sure you have not accidentally used the same phrases or words, and that the information is accurate.

**Body**

• Experiment and Analysis Description
  • Apparatus Sections
  • Materials Section
  • Test Procedure Section
  • Symbols Section
  • Errors and Precision

• Results and Discussion
  • Presentation of Results
  • Discussion of Results

**Conclusion**

• Summary of Results
• Conclusions
• Concluding Remarks
Understand the context of your presentation

Analyze your audience

Understand and articulate your purpose clearly

Develop sufficient and appropriate supporting material

Organize the material so it is easy for the audience to follow

Choose a speaking style, level of language, approach to the subject, and tone suitable to your role as well as your audience and purpose

Select graphics that will enhance your audience's understanding of your message

**Understand the Context**

- What is the broader concern underlying the need for the presentation?
- In what surroundings will you be making the presentation?
- What will happen in the situation before and after your talk?

**Audience Analysis**

- You must know how your audience will likely respond based on their Educational and cultural background, knowledge of the subject.
- What do they expect from me?
- How interested will they be in what I say?

**Plan the Presentation**

- What are the main questions they will want you to answer?
- Which of these questions is most important? least important?
Based on your purpose and the audience's expectations, in what order should you present these ideas?

**Choosing Visual Aids**

- help your audience understand your ideas;
- show relationships among ideas;
- help the audience follow your arguments [your "train" of thought]; and
- help your audience remember what you said.

**TIPS**

- Avoid too much information on any single visual.
- Use boldface type in a font size that can be easily read.
- Use sans serif type because if produces a sharper image for slides and transparencies.
- Limit the fonts you use to two per visual.
- Avoid all caps.
- Use a type--size and font--that contrasts distinctly with the background.
- Avoid visuals that use too many colors--more than four on any one aid.
- Avoid making your audience study your aids. If they are busy trying to decipher your visual aid, they will not be listening to you.

**Presentation Style**

- What kind of tone do I want to use in addressing my audience?
- What kind of image of myself and my organization do I want to project?
- What level of language do I need to use, based on my audience's background and knowledge of my subject?
- What approach will my audience expect from me? How formal should I be?

Checklist for Technical Reports

Use the following questions to ensure that your technical report is structured properly according to our specifications:

- Do you include all the required components in the required order, for example, transmittal letter, followed by title page, followed by figure list, and so on?
- Do you address your report to a real or realistic audience that has a genuine need for your report? Do you identify in the introduction what background the audience needs to read and understand your report?
- Does your report contain specific, factual detail focused on the purpose of the report and the needs of the audience and aimed at their level of understanding?
- Does your report accomplish its purpose? Is that purpose clearly stated in the introduction?
- Does your report use information sources and do you properly document them?
- Does your report use the format for headings?
• Does your report use the format for lists?

• Does your report use graphics and tables? Does your report use the format for graphics and tables? Specifically, are your figure titles (captions) to specifications?

• Does every new section (which starts with a first-level heading) start on a new page? Have you check for widowed headings (headings that start at the very bottom of a page)? Stacked headings (two or more consecutive headings without intervening text)? Lone headings (a single heading within a section)? Parallelism in the phrasing of headings?

• Does the title page of your report include a descriptive abstract, and is it written according to the specifications.

• Do you include an informative abstract in your report; is it positioned properly in relation to the other report components; and is it written according to the specifications? Specifically, does your informative abstract summarize the key facts and conclusions of your report rather than act as just another introduction or descriptive abstract?

• Does the introduction of your report include the elements necessary in good introductions, such as audience, overview, and purpose? Do you avoid the problem of having too much background in the introduction, or having an introduction that is all background?
Types of Technical Reports

**Technical-background Report**

The background report is the hardest to define but the most commonly written. This type of technical report provides background on a topic—for example, solar energy, global warming, CD-ROM technology, a medical problem, or U.S. recycling activity. However, the information on the topic is not just for anybody who might be interested in the topic, but for some individual or group that has specific needs for it and is even willing to pay for that information. For example, imagine an engineering firm bidding on a portion of the work to build a hemodialysis clinic. The engineers need to know general knowledge about renal disease and the technologies used to treat it, but they don't want to have to go digging in the library to find it. What they need is a technical background report on the subject.

**Instructions**

These are probably the most familiar of all the types of reports. Students often write backup procedures for the jobs they do at their work. Others write short user manuals for an appliance, equipment, or program.

**Feasibility, Recommendation, and Evaluation Reports**

Another useful type of report is one that studies a problem or opportunity and then makes a recommendation. A *feasibility* report tells whether a project is "feasible"—that is, whether it is practical and
technologically possible. A *recommendation* report compares two or more alternatives and recommends one (or, if necessary, none). An *evaluation* or *assessment* report studies something in terms of its worth or value. For example, a college might investigate the feasibility of giving every student an e-mail address and putting many of the college functions online. The same college might also seek recommendations on the best hardware and software to use (after the feasibility report had determined it was a good idea). In practice, however, it's hard to keep these two kinds of reports distinct. Elements of the feasibility and recommendation report intermingle in specific reports--but the main thing is to get the job done!

**Primary Research Report**

Primary research refers to the actual work someone does in a laboratory or in the field--in other words, experiments and surveys. You may have written a "lab report," as they are commonly called, for one of your previous courses. This is a perfectly good possibility for the technical report as well. In this type of report, you not only present your data and draw conclusions about it, but also explain your methodology, describe the equipment and facilities you used, and give some background on the problem. You can modify this type by summarizing other primary research reports. For example, you could report on the research that has been done on saccharine.
Technical Specifications

In this report type, you discuss some new product design in terms of its construction, materials, functions, features, operation, and market potential. True specifications are not much on writing--the text is dense, fragmented; tables, lists, and graphics replace regular sentences and paragraphs whenever possible. Thus, specifications are not a good exercise of your writing abilities. However, you can write a more high-level version--one that might be read by marketing and planning executives.

Report-length Proposal

As you may be aware, proposals can be monster documents of hundreds or even thousands of pages. Most of the elements are the same, just bigger. Plus elements from other kinds of reports get imported--such as feasibility discussion, review of literature, and qualifications; these become much more elaborate.

Business Prospectus

If you are ambitious to run your own business, you can write a business prospectus, which is a plan or proposal to start a new business or to expand an existing one. It is aimed primarily at potential investors. Therefore, it describes the proposed business, explores the marketplace and the competition, projects revenues, and describes the operation and output of the proposed business.
References

Texts


Journals

Websites:
This reference guide has been edited for this technical writing programmed.
The original and unedited version of this manual is available online at:

Other useful online references include:
http://www.mech.ed.ac.uk/students/repsstyle.html