Guidelines for Final Report

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* This page is required by WPI for all group projects. It identifies which student holds primary responsibility for each section of the report.

FORMAT FOR LETTER OF TRANSMITTAL

(Business letter format , written to agency liaison)

The Letter of Transmittal is a letter formally submitting the project report to the agency involved. A sample letter of transmittal is given below. The letter must contain the title of the report and include the following sentences:

“Copies of this report are being submitted simultaneously to (faculty advisors) for evaluation”.

“Upon faculty review, the original will be catalogued in the Gordon Library of Worcester Polytechnic Institute”.

The letter should close with a statement which thanks the liaison for his or her help.

(Sample Letter)

May 2, 2003

Mr. Robert Schultz
Desert Research Foundation of Namibia

Windhoek, Namibia

Dear Mr. Schultz,

Enclosed is our report entitled […………………] It was written in Namibia during the period March 10 through May 2, 2008. Preliminary work was completed in Worcester, Massachusetts, prior to our arrival in Namibia. Copies of this report are simultaneously being submitted to Professors Peet and Ludwig for evaluation. Upon faculty review, the original copy of this report will be catalogued in the Gordon Library at Worcester Polytechnic Institute. We appreciate the time that you and (other relevant names) have devoted to us.

Sincerely,

Your Names & Signatures

TITLE PAGE

Sample Title Page

[Project Title]

An Interactive Qualifying Project Report
submitted to the Faculty of
WORCESTER POLYTECHNIC INSTITUTE
in partial fulfillment of the requirements for the
Degree of Bachelor of Science
by

[Students' Names in alphabetical order with space for signatures]

Date: May 2, 2008

Report Submitted to:
[Name of Advisor]
[Name of Co-Advisor]
[Name of Liaison(s) & Agency(ies)]

ABSTRACT
The Abstract is of prime importance, since it is used by readers for guidance as to subject, treatment, and results. Often the quality of the Abstract will determine how much attention a decision-maker will devote to the rest of the report. Therefore, the Abstract must summarize the contents briefly and accurately, and be understandable independent of the text. It <u>must not</u> exceed 80-90 words in length and should contain no equations, figures or illustrations. The Abstract <u>must contain</u> the name of the organization with which you worked. It might begin, for example: "This report, prepared for the Desert Research Foundation of Namibia." The Abstract <u>must be single-spaced</u>.
(This abstract, unless revised by the faculty advisors, will appear on your transcript.)

AUTHORSHIP PAGE
When a single, comprehensive written report is submitted for a project, each individual's contribution to the group effort must be clearly identified. The authorship page is either a simple list of individual chapters and their respective authors or is a statement in which each contributing group member is named as having carried out one or more specific tasks within the overall project effort.

ACKNOWLEDGEMENTS
Students usually insert an acknowledgements page in which they specifically acknowledge the assistance or involvement of particular people in the project.

TABLE OF CONTENTS
This should be the last part of the report you do, because you cannot fill in the page numbers until you are finished with the report. However, you should have developed the Table of Contents early in the formulation of the report. It can serve as the basic outline of the paper.

LIST OF TABLES
This functions as a table of contents for tables. Each table should be numbered and labeled and the proper page number indicated. **The title of a table always appears above the table to which it refers.**

LIST OF FIGURES
This functions as a table of contents for figures. Each figure should be appropriately numbered and labeled. **The title of a figure always appears below the figure to which it refers**

EXECUTIVE SUMMARY
You should be working on this section from the beginning. Like the Abstract, it should be understandable independent of the rest of the report. It should be able to stand by itself, and should be <u>tightly written, concise and right to the point because this may be all that a top manager has time to read</u>. In three to five pages, you should be able to condense the critical aspects of your report: objectives, method used, findings, analysis, conclusions and recommendations.

While the format of the main body of the IQP may vary from report to report, the following outline (all in very brief statements) may prove helpful:

Introduction (including project goal & objectives)
Background (including literature review and context)
Methods
Results & Analysis
Conclusions & Recommendations
References & Appendices

I. INTRODUCTION

The Introduction should contain a section on the significance of the subject matter. It usually runs about 3 to 5 pages in length and describes in general terms what the reader will read in the body of the report.

II. BACKGROUND INFORMATION

Usually, a project topic will deal with several areas of knowledge. The Background chapter is a discussion of the theoretical background of your topic and the current and past research performed relevant to the topic area. It provides the reader with the information necessary to understand your topic. It also leads the reader to understand how and why you formulated the problem in the way you did. Your project is intended to fill a gap in knowledge or add to the store of knowledge in the subject area. In some cases, when a project results in a product such as a video tape, for example, the Background explores the rationale for creating the product, which, in turn, will be used as a tool for actions that in the end will develop knowledge. If your Background does not clearly provide a rationale for your project, you have not covered your field or you have not conceptualized the problem rationally. Your literature review from C-term should provide you with a good start. But you are expected to **greatly expand** your own knowledge through new literature sources and to provide the reader with many more sources. Remember, people who have no knowledge in your project area may look at your report in Gordon Library. Your literature review should enable them to understand the basics in your topic area, the rationale for your chosen methods, the data you discuss, and your conclusions and recommendations. Remember to focus on points, not on particular authors or sources, unless they are seminal works in the field that are so commonly recognized that the name of the author or work is immediately recognized.

Lunsford gives you examples of formats for citing sources and reporting references.

Citations should be embedded in the text using the last name of author, year of publication and page number(s).

III. METHODS (or PROCEDURES)

This chapter, one of the most important in the report, must present your methods of data collection and analysis in a way that will allow the reader to replicate your efforts with a different sample. The Procedures are the general, conceptual flowchart of the problem-solving approach. You must provide a rationale for all methods you select. If, for example, you plan to conduct interviews, you must tell why you chose to conduct unstructured versus structured interviews. If you conducted focus groups, you must justify the choice and describe in detail how you did them. If you sent out questionnaires, why did you do so? Justify the type and size of your interview sample or your questionnaire sample.

Many projects will NOT require statistical analysis. However, if your project does require statistical analysis, why did you choose one statistical procedure over another? What were the difficulties in choosing your sample? How did you pretest your interview questions or your questionnaire? What were the time, money, geographic, and human resource constraints? If you did not choose a random sample, why not? If you stratified your sample, why did you stratify it that way? Salant & Dillman (1994) & Bernard (2002) both provide useful information on designing & carrying out surveys using random sampling techniques.

Whenever possible and **if appropriate** for your topic, make sure that your methods include procedures that will allow you to qualify at least some of your results. For example, if you interviewed nine people using an open-ended interview schedule, you may still be able to tabulate your results in some way so that trends at least can be noted, reported & discussed in your results & analysis chapter, and used as the basis of your recommendations in your Conclusions and Recommendations chapter. Be complete and be specific.

In conducting your work, you may have had to modify the procedures you first intended to use. Explain what modifications you made and why. Hunches, even based on interviews, cannot be reported unless they are backed by data that have been analyzed <u>systematically</u>, even if not statistically. Systematic analysis requires organizing data according to criteria set up in advance. Usually systematic analysis means numbers are involved.

Some projects do not lend themselves to quantification. Talk to your advisors.

IV. RESULTS

This chapter contains the presentation of the findings of your investigations. Start with the simplest material, but be specific. Your reporting and any arguments you make will be infinitely stronger if you use, whenever possible, tabulations of the findings. An example is, "Six out of twenty people interviewed wanted the airport to be transferred to private ownership". Proceed to more complicated reporting. "In spite of the fact that so few people were in favor of private ownership, the majority - 18 out of 20 - felt that private ownership would result in more efficient service for passengers". Not all projects will lend themselves to this sort of reporting.

Tables may be used if doing so <u>supplements</u> but <u>does not simply</u> duplicate the text. Use as few as possible. In the text, tell the reader what to look for in the table, but discuss only the highlights. Do not use a table to take the place of text. Each table should be numbered and have a name. For example, the first table might be labeled as:

Table 2 - 1. Engineers by Field

Readers should be able to understand the table without explanation. Have others who are not in your team look at your tables and tell you what they mean. If the reader does not understand the table, revise it. Refer to the table by number: "High school students are more informed about the tasks of mechanical engineers than they are about those of electrical engineers (See Table II - 4)", for example; or "Table II - 4 shows the number of manufacturing plants that ...."

V. ANALYSIS OF RESULTS

The second part of this chapter is analysis of your results. The analysis focuses on the significance of patterns you see in your data. This chapter enables you to make recommendations and conclusions by focusing on the significance of patterns you discern in your Results. Hence, you will be able to say, "Seven out of the nine people indicated a preference for Classic Coca-Cola, indicating a trend". Or, "Since only four out of nine people believed the regulations should be changed, we cannot justify a recommendation to change the regulations. Nevertheless, our sample was so small that we cannot conclusively state that our findings constitute an adequate picture of the opinions of the total population from which the sample was drawn."

Remember that your samples will not be large enough to allow you to make statements about cause and effect. In order to do so, you would have had to use a classic experimental design in which you controlled for all variables except the ones you wished to test. You would, also, have had to use a large sample. Hence, while always referring back to your sample size for justification, you can talk only about trends and about their strength. Provide the reader with alternate explanations for the outcomes of your data. When the majority of adopters of solar equipment are between the ages of 30 and 50, it is not because older people do not like or believe in solar equipment as an energy saver but because older people have smaller access to media sources from which they can learn about solar equipment. Or they have lower incomes than the younger group, and therefore, cannot afford solar equipment, for example. Do not reject data you feel will not support your hypotheses or that will not please your agency. As researchers you have an obligation to report and analyze all relevant data. Disproving a theory or stating that the evidence is inconclusive is always as important as proving a theory.

Sometimes the writing of the report will be more logical when the authors integrate their reporting of findings with the analysis of the data. Before electing to do so, discuss your rationale with your advisors and get their permission. Many of the projects report findings that do not lend themselves to a statistical reporting style. Check with your advisor.

VI. CONCLUSIONS AND RECOMMENDATIONS

Be sure that all your conclusions are consistent with and follow from an analysis of your data. Everything in this chapter must grow logically from what you have presented in earlier sections.

The chapter indicates what policy recommendations you are making. Recommendations must follow from conclusions, which follow from your analysis, which follow from your data, which follow from your methods, which follow from your hypotheses, which follow from your discussion of background material including discussion of theories.

While recommendations grow logically from your investigation, they do not necessarily grow logically from the opinions of agency personnel nor from the political climate of an agency. On occasion, recommendations may be contrary to what an agency may wish to hear. This is a delicate situation and will require tact on your part. Discuss controversial findings and recommendations with your liaison and advisors, but be true to your data and your analysis.

VII. REFERENCES

Use the APA styles of citations unless directed by your advisors to use another model. You will find various web sites that will help you with examples. Also, use the APA Publications Guide for complete instructions.

VIII. APPENDICES

Examples of appendices include interview protocols, survey questionnaires, manuals, web sites, lists of relevant data, raw data before being condensed & analyzed. Consult with your advisors on what is appropriate.

GUIDELINES FOR FINAL REPORT

1. Use Roman numerals for Chapter Numbers, capital letters for Appendices. All Chapter and Appendix titles should appear as follows:

   Chapter 1. **INTRODUCTION**

   Leave two spaces between headings and the first line of text.
   When using subtitles, capitalize the first letter of each word and begin two lines lower.

2. All Figures, Tables and Exhibits in a particular Chapter or Appendix should be identified and numbered by Chapter or Appendix. Each <u>must</u> have a short descriptive title. For example:
   Figure 1-2. Regional growth trends. (Second figure in Chapter 1).
   Table 1-1. Energy consumption per capita. (First table in Chap. 1) Page numbering for the final report should be consecutive.

3. **MARGINS** - very important to observe in order to be able to bind all materials in a readable way. (Beware of 8 x 10 1/2 paper)
   From top of page and from right-hand side: 1 inch.
   From bottom of page: 1 1/4 inch.
   From left-hand side: 1 1/2 to 2 inches in order to leave room for binding. Nothing should appear outside these margins except the page number, which should be centered at the bottom of the page or be in the right bottom corner.

4. **Citations** – Unless otherwise directed by your advisors, footnotes should be embedded in the text in parentheses using the APA style. This preferred form takes the place of the older standard form for footnoting by numbers and puts the author's last name, year of publication, and when a direct quote is used, page numbers in parentheses. The full citation can be found alphabetically listed in the back of the document in a section called References. For example, (Jones, 1988, p.63) means that Jones wrote the book or article, published it in 1988 and you are using a direct quote from page 63. When you are not using a direct quote, the citation may be as follows: (Jones, 1988) or (Jones et al., 1988) or (Jones in Brown, 1977) unless otherwise directed by your advisors. In all examples, you are using Jones' materials. In the second example, there were more than three authors to the book. In the last instance, Brown wrote the book and cited Jones or Jones had an article in Brown's book. In the References section, use standard citation forms for your full citations. Lunsford gives you a model. Do not call the References section "Endnotes" or "Footnotes" or 'Bibliography".

   You may also have referred to other books and articles from which you got general ideas but from which you have not draw specific enough material that warrants footnotes. In this case, you will want to have an Additional Bibliography section in which you alphabetically list in full citation form those sources.

5. **REFERENCES** - The References come at the end of your project report but before your Appendices and should include all books, journal articles, newspaper articles, etc. that you used in researching your topic. The References section is an alphabetical listing according to author of all your listed References. If in the text you referred to (Walters, 1967), you must give the full citation in the References.

Example:

Walters, A. (1967). <u>The Growth of American Industry</u>. New York: Harper & Row.

<u>NOTE</u>: Periods follow the author's name and the title of the work. For journals:

Grant, R., Higgins, C., and Irving, R. (Spring 1988). Computerized Performance Monitors: Are They Costing You Customers? <u>Sloan Management Review 29</u> (2): 36-39.

In this case the article appears in volume 29: number 2, pages 36-39.

SUPPLEMENTARY GUIDELINES FOR FINAL REPORT

Double SPACE all sections of the final copies of the final report, except where you need to provide for special visual effect.

Be consistent in footnote style. The Procedures Manual includes comments on proper citation form and bibliographic form. If in doubt, consult APA Publications Guide.

COPIES OF THE REPORT TO BE SUBMITTED:

1) TWO COPIES: for Project Center files (A. Gerstenfeld & C. Peet). This copy will be used to duplicate your report for any agencies who wish to have a copy. Make sure, therefore, it is the cleanest copy possible with the highest white/black contrast. Put it in a binder so that it is easy to remove for copying. That copy should be turned in at the same time that the copy for the Registrar is turned in. Give it directly to Creighton Peet in the IGSD office. A CD of the report would also be appreciated to enable easier storage and reproduction.

2) ONE COPY: for the Registrar, which will eventually go into Gordon Library. This will be an electronic copy only.

3) ONE COPY: for each faculty advisor

4) ONE COPY: for organization liaison

5) ONE COPY: For our local coordinator, Hippy Tjivikua – **leave it with him before leaving PON.**

6) THREE OR FOUR COPIES: one for each member of the project team.

Please note that your advisor, liaison and the PON may prefer to have your report on a CD instead of or in addition to a hard copy. Please check with them to determine what they want.

SUPPLEMENTARY GUIDELINES FOR FIGURES

Graphs, charts, and other illustrations are normally referred to as Figures. Tables are referred to as tables.

If a figure takes up 1/2 page or more, give it its own page. Place it as closely as possible to the section of the text to which it refers.

If a figure is more than a page, include it as an appendix to the report.

If a figure is taken from or is a modification from an outside source, credit that source.

Source: Statistical Abstract of the U.S., 1966, p. 23

or

Adapted from Statistical Abstract of the U.S., 1966, p. 25.

This sort of reference appears below the figure. Do not use a figure if it is not referred to in your text. The title of a figure should be located beneath the figure, while the title of a table should be located above the table.

Below is an example of a table:

Table I - 1. Fruit Grown in Massachusetts. (Given by town in percent of total yield of fruit in state.)

	Leominster	Cambridge	Springfield
Apples	10.0	0.05	6.0
Oranges	3.0	0.01	0.0
Plums	2.0	3.00	l7.0

Source: Adapted from the U.S. Department of Agriculture, July 1998

SUPPLEMENTARY NOTE ON SPELLING & GRAMMAR

A few words commonly misspelled and/or misused are: liaison, effect/affect, methodology/method, which/that - check dictionary for correct usage; it's/its - first is contraction of it is, second is possessive pronoun of it; “data are”, NOT “data is”; in general, avoid using the passive voice, although it is sometimes appropriate; make sure verb agrees in number with its subject; be consistent with verb tenses.