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EFFECTIVE PROJECT REPORT WRITING AND PRESENTATION

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ABSTRACT

This document presents strategies you can use to write an effective project report, and prescribes an organizational structure for writing such a report. Four fundamental objectives for writing an effective project report are cited, namely, demonstration of your familiarity with the problem, establishment of your modeling expertise, maximization of instructor's insight, and minimization of instructor's effort. Writing strategies and organizational structure are meant to secure these objectives.

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INTRODUCTION

You are a student dealing with a given problem as a project topic. You have a client (i.e. your project supervisor/ instructor) who must evaluate your project work. You have investigated the problem, performed an analysis and must communicate its recommendations by writing a project report. How should you go about composing this report?

In what follows, I present guidelines, recommendations and strategies for writing project reports of this type. These strategies are based on an assumption of pure self-interest for you to do the best you can to convince your instructor that you, indeed carried out the project. One of the best ways to accomplish this is to establish your competence with your instructor. That is, you want to instil confidence in your analysis, results and recommendations, and instil confidence in your own capabilities, both in problem-solving and in presenting your case. You want to maximize the effectiveness of your written presentation in achieving these objectives.

Your Goals in Writing a Project Report

Figure 1 presents an objective hierarchy for writing a project report. The hierarchy divides the overall objective of maximizing the effectiveness of your written presentation into four sub-objectives. The first two sub-objectives, demonstrating familiarity with the problem and establishing modelling expertise, help establish your competence. These two sub-objectives relate to the substance of your report. If you do not achieve these, then your recommendations will not be convincing, regardless of how polished your written presentation is.

The third sub-objective is maximizing instructor insight. You can achieve this by judiciously drawing attention to intuitive aspects of the problem on which your results crucially depend, or by emphasizing parts of your analysis which explain simply what should be done or why. It is very important to explain and not merely describe your results. If the substance of your report is solid but the instructor gains no insight into the problem by reading your report, then your recommendations are nothing but a waste of effort.

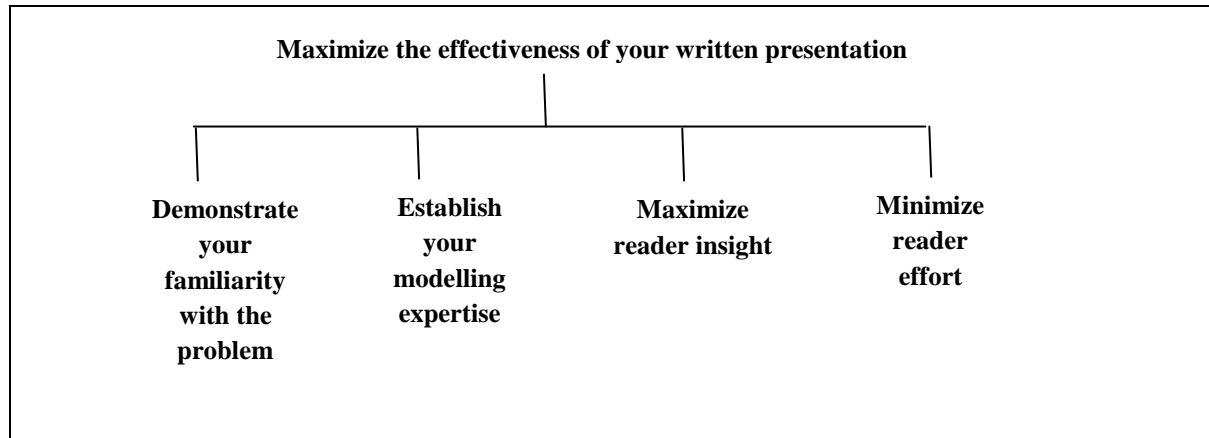


Figure 1: An objective hierarchy for writing a project report.

The fourth sub-objective is minimizing instructor effort. Your instructor is a busy person. If you do not provide him with easy and quick ways to learn the gist of what you have done, then he is much less likely to read your report, and much less likely to understand what he has read. Your instructor may have to read 3 to 4 reports like yours in a few days. If he/she cannot understand what you have written without expending more time than he/she wants, your grade will justifiably suffer. All of the pieces of advice given below regarding the organization of your report and proper writing style to use has as its objective to minimize instructor effort.

You can save your instructor work at the organizational level of your report or at the sentence level. The general strategy for minimizing effort at the sentence level can be simply summed up: Avoid forcing the instructor to repeatedly read text for understanding. I will elaborate on this below.

The sections below discuss three general strategies for minimizing instructor effort at the organizational level.

- ✓ Your instructor needs to get to the point of your report quickly, and a properly organized report should facilitate this.
- ✓ Your instructor should be able to follow your document's structure from the top down. Almost no one will want to read your report through from first page to last in a linear fashion. Your instructor should be able to proceed "top down", by selecting only parts of your report to read in detail while still understanding the purpose and context of other parts to which he/she gives less attention.

✓ Your instructor should be able to choose the level of technical detail he/she wishes to read. A properly organized report will give him/her the option of avoiding technical detail should he/she desire.

All of these objectives and strategies will be further discussed in the sections which follow.

One of the most frustrating project reports one could ever grade is when a student tries to convey the complete experience he has in tackling his assigned topic. Starting from the beginning, he describes every step, every mistake, every back-track and every partial success. The document structure will consist of little beyond “First I did this... Next I did that.... Next” Such instructor will not have top-down option, and will be forced to read his story from beginning to end, which is the last thing he has the time or patience for. The strategies described below are meant to keep you from doing similar thing!

FORMAT OF A PROJECT REPORT

The following sections are recommended format for a standard project report in Petroleum Engineering as approved by the departmental board of examiners:

- A Title Page
- A Certification page
- Dedication
- Acknowledgement
- A Table of Contents
- List of Tables
- List of Figures
- An Abstract
- An Introduction
- A Literature Review Section
- Methodology/Materials and Methods (optionally divided into sub-sections)
- Results and Discussion
- Conclusions and Recommendations section
- References section
- One or more Appendix sections (optional)

You are expected to create the above sections, in that order. Each element of this structure will serve one or more of your goals in its own particular way, as discussed below. However, the overall purpose of establishing this kind of document structure is to provide the instructor a get-to-the-point option, as well as a top-down option. An instructor wishing to get the gist of your report can peruse your section headings to see in broad outline what you have done. He or she may then skip over certain sections or subsections and focus on others.

Use Content-Heavy Headings

The purpose of document structure is to provide your instructor with “top down” and “get to the point” options. These options can only be realized, however, if your section and subsection headings convey content meaningfully. You should strive to achieve this. It is literally true that the best section headings make it less likely that your instructor will need to read the section.

The Prefatory Section

This includes the Title page, Certification page, Dedication, Acknowledgement, Table of Contents, List of Tables, List of Figures and Abstract and these pages are paged in roman numerals (i, ii, etc.).

Title Page

The standard form to be used for a title page is displayed in Figure 2 below. If you are composing the title page, make sure you state your name(s) and matriculation number clearly!

Project Title	Forecasting Achievable Gas Production Rate Using Nodal Analysis Technique
Your Name Your Matriculation Number	Makinde, Favour Adejare CUPG070198
Submitted to	Submitted to
Department College The Institution	Petroleum Engineering Department College of Science and Technology Covenant University, Ota
Date	October, 2008

Figure 2: The generic form for a title page on the left, and an example title page on the right.

Certification Page

A certification page is an optional feature that is not required in some types of technical reports such as feasibility study reports, laboratory reports, research proposals et cetera. The purpose of the certification page is to give credibility to the fact that the report being presented was actually supervised and /or approved as the product of the effort of the author. A typical certification page is shown below in figure 3.

CERTIFICATION	
This is to certify that this project work was carried out by Engr. Makinde, Favour Adejare in the Department of Petroleum Engineering, Covenant University, Ota, Nigeria.	
..... Date Supervisor C.T. Ako, B.Sc, M.Sc, PhD
..... Date Head of Department C.T. Ako, B.Sc, M.Sc, PhD

Figure 3: A Typical Certification Page

The Abstract

The Abstract comes between the list of figures and the introduction. It appears on a separate page of its own. At a minimum, your Abstract must:

- ✓ briefly state the problem, and
- ✓ summarize the important conclusions of the study

Depending on the context of the study, it may make sense to include additional information, such as:

- ✓ what brought about this particular study,
- ✓ what the objectives of the study were,

- ✓ What assumptions or restrictions were imposed,
- ✓ What actions the study recommends.

The precise content may vary, but the key is to include the minimum amount of information that it takes to communicate the essential message of the report. A very good abstract might be sufficient to give some instructors an adequate understanding of the report even before reading it.

It is always best to keep the abstract to one page or less (much less, if possible). Remember who will be the audience for the report; do not include unnecessary introductory or background material that your instructor does not need. Get to the essentials, fast! Assume the instructor is busy and will give the abstract only a minute or two of attention; use short lists (as above) to call out key points. The purpose of the abstract is to give the instructor a “get to the point” option.

Write your Abstract last, to ensure that it reflects your completed thinking about the problem, your analysis, and your presentation. If you write the Abstract first, it tends to come out sounding like an Introduction – which belongs in the main report.

Put some work into making your abstract read well. It is the first (and often the only) part of the report that people read, so you want it to make a good impression.

The Introduction – Chapter 1

In this section you need to outline the underlying concepts (and if required a brief version of relevant theoretical background) needed to discuss the topic and it may include:

- ✓ Relevant history of the project topic.
- ✓ A precise statement of the problem.

An overview of the nature and scope of the study, which gives the specific objective of the study and any major assumptions or constraints imposed.

The Literature Review Section – Chapter 2

This is where relevant information from published/unpublished work/projects/papers/journals related to the project topic are sourced and presented. Extensive literature search on the topic enhances the quality of your work. Every material used here is expected to be cited/referenced (this is discussed further under the reference section). The essence of this chapter is to provide a critical assessment of the previous works reported in the past with a view to shedding light on the

background of the present study being reported.

Methodology/ Materials and Methods – Chapter 3

This section explains how you applied techniques of Petroleum Engineering to the problem at hand. An effective Methodology section should establish your modelling expertise, while maximizing instructor's insight and minimizing instructor's effort. Included in your discussion should be:

- ✓ Model development (if required)
- ✓ A careful description of your model (s) and techniques that you employed.
- ✓ Details of modelling assumptions or constraints that you imposed in order to make your analysis possible.
- ✓ A description of whatever data inputs your model required, how you estimated parameter values from data, and where your data came from.

Notice that this section is concerned with modelling assumptions that you imposed for technical reasons. The discussion in this section should be detailed enough to enable the knowledgeable instructor to comprehend your method of analysis. The presentation should be purposeful, however; go only into those technical details that are directly relevant to what you have done (minimize instructor's effort). Naturally, you will want to present your work in a positive light, emphasizing the power and appropriateness of your techniques (establish your modelling expertise). However, it is equally important to be honest in your descriptions; you should make all your assumptions clear, and mention any significant limitations to your approach (maximize instructor's insight). If you expected your analysis to yield particular results, describe them, and then contrast your results with your expectations.

Results and discussion – Chapter 4

The presentation and discussion of the results is the heart of the technical report. Many readers, of course, are interested only in obtaining the quick review of the work afforded by the Summary and the concluding section. But readers who have reason to study the entire text of a report will normally spend most of their time on the Results and Discussion section.

The first purpose of this section is a well-organized and objective presentation of the results. Tables and figures that show the results should have sufficient supporting description to permit

the reader to interpret them quickly and accurately. But do not repeat in words what is already apparent from examination of the tables and figures.

The second purpose of this section is a discussion of the results, together with their analysis, to show that the conclusions are warranted. Each major conclusion should be clearly explained and compared with the results of similar work by other investigators (if there is any).

The following sub-sections describe the mechanics for achieving the above enumerated purposes. The organization, the methods of presentation, and the discussion of results are described.

Organization of Section

The Results and Discussion section should present the data as concisely and clearly as possible. To achieve this goal, prepare a good outline of this section before starting to write.

Conventionally, an introductory statement is used to remind readers of the type of tests conducted and the scope of the investigation. Any other statements necessary for correctly interpreting the results should be made in this introductory paragraph.

An important decision is whether to present this material as a single section or as two separate sections, one entitled "Results" and the other "Discussion." Regardless of the length of the report, a single section combining the results and their discussion is usually preferable because this scheme is clearer and less repetitious.

Separate sections may sometimes be desirable:

✚ When heterogeneous data must be considered in making a point in the discussion

For example, the use of separate sections may be better when reporting test data on several materials to determine which is best for a particular application. In this case the test results for each material would be presented in the Results section. The Discussion section would then be used to compare the properties of the various materials, to review their advantages and disadvantages for the application being considered, and finally to select the best material.

✚ When a large number of similar curves must be compared on a single figure

If your data fall too close together to be presented on a single plot, you can present the original data in separate figures and later combine only the faired curves (using different types of lines)

from these figures on a single figure for comparison and discussion. The report may well be written with these two sections separated. A lengthy presentation of results about which there is little or no discussion is best made in an appendix. Then only the comparison figure need be shown in the Results and Discussion section, with reference made to the appendix.

Presentation of Results

Data should be presented as clearly and simply as possible. Although you are familiar with the work, others are not. Avoid taking too much for granted; avoid complicated correlations; avoid making the presentation too long and too involved with insignificant details. First present the data in a simple, readily understood form. Then if necessary, give complicated comparison figures or correlation curves that make sense only to those fully familiar with the field. In preparing the figures and tables take care to put them in acceptable form (see a standard in Table 1 below).

Table 1: Standard Table Format

DEPTH (ft)	POROSITY (%)
4002 – 4006	12
4006 – 4008	16
4008 – 4012	10
4012 – 4016	14
4016 – 4018	15
4018 – 4021	15

Including a summary data table is sometimes desirable. The table should include the data necessary for your readers to evaluate the accuracy of your plots and correlations. Additional data may be included to enable them to devise additional plots and correlations. For the sake of brevity present only the most important data in the summary table. But if calculated data are very important and are widely used in the report, include them in the summary data table even though the reader could obtain these values by independent calculations.

Discussion of Results

The discussion of the results is one of the most important parts of a technical report. To discuss the results adequately, you must clearly understand their significance. This requires that you have mastery of the theory pertaining to your field. The discussion must clearly point out the exact contribution made to the existing fund of knowledge by the new data. If the results have an

immediate application, point this out. If possible, give an example to illustrate the method of application. Clearly state any significant conclusions and either prove or properly qualify them. But discuss the results; do not merely recapitulate them. The major results and the conclusions, normally stated in both the Summary and the concluding section, must be clearly established here.

Any new or unusual result should be explained. If you do not understand the phenomenon or if the data are too limited to permit rigorous analysis, it is sometimes worthwhile to present a speculative discussion outlining several possible causes. Alert your readers that such a discussion is speculative.

The discussion of the results sometimes includes the method of computation or derivation, normally presented under methodology. Such situations may arise when one figure is derived from preceding figures. If the method is involved, include a complete example as an appendix and indicate only the main steps here.

Again, judgment must be exercised to achieve the desired result. Essential information must not be kept from the reader. But trivial details must be subordinated by placing them in an appendix to avoid diluting the text and obscuring the important facts. End the discussion with a short summary explaining the significance of your work. "When you describe the meaning of your little bit of truth, do it simply. I believe that the simplest statements evoke the most wisdom; verbose language and fancy technical words are used to convey shallow thought".

Your Conclusion and Recommendations Section – Chapter 5

This section can be titled "Conclusions" or "Recommendations" or both, depending on the nature of the report. In it, you give the implications of your study for the actual system at hand. Note that this section allows the inclusion of "deductions." The usual form of reasoning in reports is to draw a conclusion from a series of facts. Conclusions should be general: They should not depend on the particular apparatus or conditions of the report. If more than one conclusion is drawn, present them in the order of importance.

After the conclusions are written, examine every word and sentence critically to ensure that it means what you intended it to mean. Do not "conclude" already known facts. Do not confuse conclusions with results.

You need to include the following items:

- A list and discussion of your specific conclusions – paralleling the list you gave in the Abstract, but with more detail.
- An explanation – in words – of how your analysis supports your conclusions.
- Recommendations for putting your conclusions into practice in the real system.
- Suggestions for further analysis.

Take extra time to make this section readable. Next to the Abstract, it is the section most likely to be seen. The presence of a concluding section gives instructors a “get to the point” option: Some instructors will skim through the report to get to your conclusions, so be sure that this section does not require too much familiarity with the methodology section to be understood.

Almost always, a single study is not the last word on a problem. While you should try to make your conclusions specific enough to be useful, do not oversell your analysis. If important questions remain, say so, and try to indicate how they might be attacked. Try to suggest further work that you feel is most relevant to the current project and that can be most strongly justified.

References Section

Referencing is the act of acknowledging sources of borrowed ideas and/or information consulted while preparing a technical report. It entails making (1) direct reference to the source within the body of the report itself, i.e., citing of references, and (2) itemizing all the sources at the end of the report, i.e., listing of references. Hence a list of references, sometimes simply referred to as “references” is usually a constituent part of most technical reports. It is different from bibliography. While a list of references is a register of only sources directly cited in a write-up, a bibliography is an assemblage of all sources consulted, whether cited or not in the report.

References are mostly used for two purposes:

- (a) To indicate the sources of information, including all quoted materials, ideas and facts obtained from specific sources. However, it is unnecessary to give the source (s) of

information that is generally available from a wide variety of sources, i.e., information that is of common knowledge; and

- (b) To refer readers to further sources of information on the subject matter.

It is important to get in the habit of properly recognizing works from which ideas are borrowed. It is especially important that other people's works are not plagiarized and claimed as one's own. Such acts are unethical and can lead to the destruction of a professional reputation and/or career.

Citing References

There are two primary issues associated with citing of references in the body of a technical report. The first one is **how** to cite each reference material, while the second issue is where to place the reference itself.

How to Cite References in the Body of a Technical Report

There are different methods of citing references in the body of a technical report. Many organizations and institutions issue instructions on the style of referencing that is preferred. The two most commonly used styles are:

1. The Harvard or "Name and Year" System: Most typically, this method works as follows: Names are always used in the text in citing papers with either one or two authors, e.g., "Bade (1998)", "Jones and James (1999)". If the publication has three or more authors, the list is shortened and is cited as "Jones *et al.* (1999)".

2. Citation Order System: The citation order system is simply a system of citing the references (by number) in the order that they appear in the project report. With this system, readers can quickly refer to the list of references if they so desire in 1-2-3 order as they appear in the body of the report. It may, however, be cumbersome for the author to prepare because of the substantial renumbering chore that often results from addition or deletion of references (Olorunnisola 2003).

The following rules are applicable regarding how to cite references using the Harvard system:

- i. For a work authored by an individual the surname alone should be mentioned, without either the initials or the other names along with the year when the work was originally published.

- ii. If there are two authors the surnames of both authors should be mentioned without either the initials or the other names along with the year of publication.
- iii. Where a work has three or more authors, the surname of only the first author must be mentioned, without either the initials or the other names, along with the year when the work was originally published. The abbreviation “*et al.*”, meaning “and others” should be used for the second and subsequent authors. The abbreviation is usually italicized.
- iv. If a work was published anonymously or the author’s name is not known the abbreviation “Anon” should be used along with the year when the work was originally published.
- v. Where the author of a document is an organisation or institution, the name of the establishment, or the acronym if it is a well known organisation, should be mentioned, along with the year when the work was originally published.
- vi. If an item of information was obtained from a secondary source, i.e., one author quoting another author, it is acceptable to either quote the primary source, particularly if the item of information is significant and its origination is directly traceable to that source, or quote the secondary source. Better still the two authors may be quoted simultaneously.
- vii. If an item of information was obtained orally, usually from an expert, the surname of the informant as well as the year the information was obtained should be mentioned.
- viii. When two or more publications of the same author that appeared in the same year were consulted, they should be mentioned in a sequence, e.g., Bade (2001a, 2001b, 2001c).

Where to Place References in the Narrative

There are several ways in which references are placed in the body of the narratives in a technical report. Some of the common ways include:

(a) Format I: Placement at the Beginning of a Sentence

When this method is used, the year of reference should be placed in brackets directly after the author(s)’ surname(s) or acronym(s), and the narrative should be cast in reported speech format, using phrases such as:

“----reported that----“

“----suggested that----“

“---- indicated that----“

“----confirmed that----“

“----asserted that----“

“----noted that----“

“----opined that----“

“----concluded that----“

Examples of such sentences are:

“Ahmed (2003) observed that food security was a major problem in Nigeria” — citing a singly authored work.

“Ezekwe and Olulana (2001) reported that polio would be eradicated in Nigeria by the year 2005”- citing a work authored by two authors.

“Pius et al. (2000) suggested that more emphasis should be placed on vocational education in Nigeria” - citing a work authored by three or more people.

“Anon (1998) noted that engineering was the bedrock of national development”- citing work of an anonymous author

“FAO (1999) confirmed that there was a bumper harvest of maize in Nigeria in 1998” citing a work authored by an organisation, in this case, Food and Agricultural Organisation of the United Nations, whose acronym is FAO.

(b) Format II: Placement within a Sentence

Whenever this method is used, the year of reference should be placed in brackets directly after the author(s)’ surname(s) or acronym(s), and the narrative should be cast phrases such as:

“as noted by”, “as observed by”: “as suggested by”, “as confirmed by” “as pointed out by”, etc.

Examples of such sentences include the following”

“As observed by Ahmed (2003), food security is still a major problem in Nigeria” — citing a singly authored work.

“As reported by Ezekwe and Olulana (2001). Polio will be eradicated in Nigeria by the year 2005” - citing a work authored by two authors.

“As suggested by Pius et al. (2000), more emphasis should be placed on vocational education in Nigeria” - citing a work authored by three or more people.

“As noted by Anon (1998), engineering is the bedrock of national development”— citing work of an anonymous author

“As confirmed by FAO (1999), there was a bumper harvest of maize in Nigeria in 1998” citing a work authored by an organisation.

(c) Format III: Placement at the End of a Sentence or Paragraph

Whenever this method is used, both the author(s)' surname(s) or acronym(s) and year of reference should be placed in bracket directly after either the sentence or paragraph. In which the item of information is used.

Examples include the following

“Food security is a major problem in Nigeria (Ahmed 2003)” - citing a singly authored work.

“Polio will be eradicated in Nigeria by the year 2005 (Ezekwe and Olulana 2001) ‘ - citing a work authored by two authors.

“More emphasis should be placed on vocational education in Nigeria (Pius et al. 2000)”- citing a work authored by three or more people.

“Engineering is the bedrock of national development (Anon 1998)”- citing work of an anonymous author.

“There was a hamper harvest of maize in Nigeria in 1998 (FAQ 1999,)”- citing a work authored by an organisation, in this case, Food and Agricultural Organisation.

There are occasions when a numbering scheme is employed in citing the references instead of using author(s) name(s) and years of reference, The number, in this instance refers to the position of the author(s) in the list of references. In such cases, references can be cited as follows:

“Ahmed (1) observed that food security was a major problem in Nigeria” - Format I

“As observed by Ahmed (1), food security is still a major problem in Nigeria” - Format II

“Food security is a major problem in Nigeria (1)” – Format III

There are times when the numbers are written as superscripts, especially when Format I is used e.g.

“Ezekwe and Olulana¹ reported that polio would be eradicated in Nigeria by the year 2005”

General Tips on Citing References

- All illustrations - tables, charts, photographs, etc -adapted or borrowed from different sources should be referenced.
- All direct quotations must be placed in inverted commas so that there is no risk of mistaking them for paraphrases. The spellings and punctuation of the original material must be maintained.
- All published works — books, journal articles, monographs, conference proceedings, special reports, etc- and unpublished works —project reports, dissertations, theses, personal; communication, etc.- from which concrete ideas and useful items of information were obtained in the course of preparing the report should be cited.
- When a publication appears in an edited book, the name of the author(s) rather than that of the editor(s) should be cited.

For most technical reports, it is usually not necessary to cite the actual page in a book, thesis, journal article, etc, from where the item of information was obtained.

Preparing a List of References

As mentioned earlier, a list of references is supposed to be a register of all sources of published and unpublished information cited in the body of a report. As in the case of citing references, there are two basic issues involved in preparing such list. The first issue bothers on **what** kind information should be supplied, and to what level of details, while the second issue is **how** to arrange the references.

Information Requirements

Different types of information sources require different levels of details when preparing a list of references. The basic requirements are as follows:

Serial Publications

For serial publications (journals, conference proceedings, newspapers, magazines), the following items of information should be provided:

- ❖ The author (for journals, conference proceedings) or the issuing body (for newspapers, magazines).
- ❖ Date of publication. For journals and conference proceedings, the year of publication is sufficient. For newspapers and magazines, the full date is required. The date is usually placed directly after the author(s)' name. However, it is sometimes placed at the end of the reference statement.
- ❖ The title of the article. This may or may not be placed in quotation marks
- ❖ The title of the publication. This should be recorded in full unless there is a recognised standard abbreviation. It may or may not be underlined. It also may or may not be italicized.
- ❖ Volume number. This is usually recorded either in upper case roman numerals or in arabic numerals.
- ❖ Serial number. This is usually recorded directly after the volume number.
- ❖ Page numbers, i.e., the page(s) which the article occupies. This is usually recorded directly after the serial number.
- ❖ The following examples illustrate how information on journal articles and conference proceedings should be referenced.

Journal Articles

Damodaran, K., 1995. Selection of Woodworking Machines - Some Critical Aspects and Considerations. Wood News 4(4):37-41. -Title of article is not placed in quotation marks; but title of publication is underlined.

Damodaran, K., 1995. "Selection of Woodworking Machines - Some Critical Aspects and Considerations". *Wood News* 4(4):37-41. - Title of article is placed in quotation marks; but title of publication is italicized.

Damodaran, K., 1995. Selection of Woodworking Machines - Some Critical Aspects and

Considerations. Wood News Vol. 4 No. 4. Pp.:37- 41. - Volume, serial number and pages occupied by the article are directly mentioned.

Damodaran K., 1995. Selection of Woodworking Machines -Some Critical Aspects and Considerations. Wood News 4(4): 37-41. - Volume, serial number and pages occupied by the article are not directly mentioned. The first numeral stands for volume, the second one in bracket stands for the serial number, while the two numerals separated by hyphen represent the pages.

Conference Proceedings

Olalere, J.B. 1997. Ergonomic Evaluation of a Yam Planter. Proc. American Society of Agricultural Engineer. Conference, Vol. 1: No 3. Pp 262-274. - The title of the proceedings is underlined and volume, serial number and pages occupied by the article are directly mentioned.

Olalere, J.B. 1997. Ergonomic Evaluation of a Yam Planter. Proc. American Society of Agricultural Engineer. Conference, .1(3): 262-274. - The title of the proceedings is not underlined and volume, serial number and pages occupied by the article are not directly mentioned.

Books

For books the following items of information should be provided:

- ✓ The author(s)
- ✓ Date of publication. For journals and conference proceedings, the year of publication is sufficient. For newspapers and magazines, the full date is required. The date is usually placed directly after the author(s)' name. However, it is sometimes placed at the end of the reference statement.
- ✓ The title of the book. This may or may not be placed italicized
- ✓ The edition. This should be recorded if the book is in its second or subsequent edition.
- ✓ The publisher of the book
- ✓ The address of the publisher
- ✓ The volume number if you are not referring to all the volumes in a multi-volume publication

- ✓ The total number of pages of the book (this is optional)
- ✓ The page(s) occupied by the particular article consulted if the book is a collection of articles

The following examples illustrate the points being made:

Craft, B.C., and Hawkins, M.E., 1991. *Applied Petroleum Reservoir Engineering*, Prentice-Hall, Inc., Englewood Cliffs, N.J. Here the title of the book is italicized, but the number of pages of the book is not recorded.

Craft, B.C., and Hawkins, M.E., 1991. *Applied Petroleum Reservoir Engineering*, 2nd Edition, Prentice-Hall, Inc., Englewood Cliffs, N.J, 226 pp. Here the edition of the book as well as the number of pages of the book is mentioned.

Academic Project Reports, Dissertations and Theses

For academic project reports, dissertations and theses the following details should be recorded:

- ✓ The author's surname and initials
- ✓ The year in which the report was accepted
- ✓ Full title of the report
- ✓ The course or degree for which it was submitted
- ✓ The name of the department and/or faculty to which it was submitted
- ✓ The name of the university
- ✓ The total number of pages of the report

The following examples illustrate these points:

Ajani, B. O. 2003. Monetary and Fiscal Policy Implementation in Nigeria. B.Sc. Project Report, (unpublished), Department of Economics, Madonna University, Nigeria 150 pp.

Olusola, A. O. 1999. Monte Carlo Simulation Modelling of Sawmilling Operations in Ghana. Ph.D. thesis, (unpublished), University of Ghana, Legon 200 pp.

Monographs and Similar Types of Reports

For monographs and similar types of reports, the following details should be recorded:

- ❖ The author's name
- ❖ The year in which the report was written

- ❖ Full title of the report.
- ❖ The name of the publisher
- ❖ Total number of pages

Okigbo, L., 1964. Sawmill industry in Nigeria. A Report Published by the Federal Department of Forest Research, Ibadan, Nigeria. 45 pp.

Ladan, M.M. 1985. Sand Casting Practices at Nnewi M. Sc. Seminar paper (unpublished), Department of Mechanical Engineering, Anambra State University, Nigeria.45pp.

FAO, 1979. High forest development: Nigeria's development alternatives for forest resources. UNDP/FAO Doc. For NIR/71/1546 Technical Report 2. Rome, Italy 25pp.

Materials Obtained from Web Sites

For materials obtained (downloaded or otherwise) from web sites, the following details should be recorded:

- ❖ The author's name (if it is available, otherwise treat as anonymous)
- ❖ Full title of the report.
- ❖ The web site address
- ❖ The date the site was visited

The following is an example:

Dirks, J., Perspectives on Wooden Furniture Production, Marketing and Research. www.cintrafor.org/research (site visited on January 21, 2004).

Makinde, F. A., Isehunwa, S.O. and Olamigoke, G. Carbon Capture and Sequestration in Nigeria: Prospects and Challenges. www.spejournalofeng.org/research (site visited on February 29, 2008)

Arranging the List of References

There are several ways of arranging a list of references. The common ones include the following:

- i) **Alphabetical Ordering System:** This involves preparing the list in an alphabetical order, e.g.

Areola, O. 2001. Deforestation in Nigeria: The Pressures at the Grassroots Level, in "Deforestation, Environment, and Sustainable Development- A Comparative Analysis" Vajpeyi, D.K. (Ed.), Praeger Westport, Connecticut, USA, pp. 173-196.

CBN, 1992. Annual Report and Statement of Account. Published by Central Bank of Nigeria (CBN), Lagos, Nigeria. 50pp.

Damodaran, K., 1996. Technology for Sawing Small Diameter hardwood Logs. Wood News 5(4):34-39.

ii) **Alphabet-Number System:** This involves not only preparing the list in an alphabetical order, but also numbering the references accordingly in ascending order, e.g.

1. *Areola, O. 2001. Deforestation in Nigeria: The Pressures at the Grassroots Level, in "Deforestation, Environment, and Sustainable Development- A Comparative Analysis" Vajpeyi, D.K. (Ed.), Praeger Westport, Connecticut, USA, pp. 173-196.*
2. *CBN, 1992. Annual Report and Statement of Account. Published by Central Bank of Nigeria (CBN), Lagos, Nigeria. 50 pp.*
3. *Damodaran, K., 1996. Technology for Sawing Small Diameter hardwood Logs. Wood News 5(4):34-39.*

iii) **Citation Order System:** The citation order system is simply a system of listing the references (**by number**) in the order that they appear in the report, e.g.,

1. *Eso, K. 2003. Further Thoughts on Law and Jurisprudence. Spectrum Law Publishing, Abuja, Nigeria.*
2. *McGinn, R. E. 1996. Ethical Issues in Science: A Topology and List of Contributory Factors Unpublished manuscript culled from Reis. 1997.*
3. *Badiru, A. B. 1996. Project Management for Research: A Guide for Engineering and Science. Chapman & Hall, London, UK. 224 PP.*
4. *COREN 1992. Code of Ethics for Registered Engineers, published by the Council for the Regulation of Engineering in Nigeria, (COREN), Ikeja, Lagos.*

Sundry Tips on Preparing a List of References

- ✓ Use Punctuation marks to help the reader distinguish each item of information. There is no standard method of punctuation, but the simplest method is to separate each item of information by commas, colons, semi-colons, and/or full stops.
- ✓ Ensure that the details provided are complete and accurate enough to enable a reader,

who so wishes to locate the book in a library or place an order with the publisher.

- ✓ If an author's name is to be mentioned more than once consecutively in the same list, it is acceptable to draw a line to represent the author's name after the first mention. The line may be used to also represent the years of publication of the different documents if they are the same. Otherwise, the year of publication of each document must be recorded after the line.
- ✓ If there are multiple authors, all the names must be listed. The use of et al. should not be used in a list of references. It is only allowed when citing references in the body of the report.
- ✓ While "anon", the abbreviation of the word "anonymous" is allowed in citing references, the word must be written full while preparing a list of references.
- ✓ Record the page(s) of articles or information cited from encyclopaedias.
- ✓ For an edited book, the name of the author(s) and the date of publication must be recorded first, followed by the title of the chapter or paper contributed. Then followed the editor(s)' name(s) with the abbreviation "ed." placed in parenthesis, and then title of the book and all the other items of information on the book.
- ✓ It is common practice to use single spacing within each reference and double spacing in-between references to make the list appear tidy and easy to read.
- ✓ Where someone's work was translated, the name(s) of the translator(s) should be recorded.
- ✓ For multi-volume publications, the actual volume consulted should be recorded.
- ✓ The titles of all publications should be recorded in full, along with the subtitles where applicable.
- ✓ Reference information should be taken down from the source itself. However, if a source does not provide enough details, a library catalogue may be consulted.
- ✓ When the place of publication of a material is unknown, the abbreviation 'n.p.' may be used. Where several places of publication are given, it is ok to record the first.
- ✓ For books, and similar printed materials, record the date of the edition and not the reprint date.
- ✓ When referencing the Bible, record the chapter and the verse in Arabic numeral, separating both by a colon.

- ✓ It is common practice to capitalize the first letter of every word in a list of references, excepting words such as: “and”, “of”, “in”, “at”, “for”, “a”, “an”, “between”, “among”, “from”, “on”, “the”, etc., whenever they appear within instead of at the beginning of the sentence.

Using Appendices

In reports that have a substantial technical component, it is often a good idea to include one or more appendices. Again, this strategy minimizes instructor effort by providing a top-down strategy and allowing him/her to avoid technical detail should he/she desire. Items that go into an appendix include:

- ✚ Background material and data. Examples include excerpts from previous studies, data previously collected by the client, and architectural drawings;
- ✚ Computer input or output. A computer program or your input to a simulation or optimization package may be listed, as well as the output from such packages. However, if these are very long, they should be included on a disk instead.
- ✚ Raw data. You may wish to provide detailed tables or graphs showing the numbers that you summarized in the Analysis section of the report.
- ✚ Derivation of analytical expressions. If you took an expression from a book or article, simply citing it is enough; but if you derived the expression and it is not obvious, you should give the derivation in an appendix.
- ✚ Tedious calculations. You may not want to interrupt the instructor’s train of thought by including, say, the details of a long present-value computation.

Instead, simply say “the present value of Alternative 3 is \$352,000 (see Appendix A for details)” and let the interested instructor consult the appendix for the complications involving taxes, depreciation and the like.

If you have several of these items to include, put each in a separate appendix.

Identify the appendices by letters A, B, C, and so forth.

BIBLIOGRAPHY

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Anonymous (2001). A Guide to Technical Report Writing. The Institution of Engineering and Technology, UK.

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