METHODOLOGY OF BASIC AND APPLIED RESEARCH

2nd Edition

Edited by:

A. I. Olayinka, V. O. Taiwo, A. Raji - Oyelade and I. P. Farai

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Contents

13

WRITING A PhD THESIS

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DEFINITIONS
Thesis
The word 'thesis' is a common term so well rooted in scholarly talk and presentations that one often wonders if the meaning is as universal as it sounds. Thesis simply means "a dissertation resulting from original research - especially when submitted for the award of a degree or diploma". It is a complete record of the research done for a postgraduate degree. The emphasis is on originality and research (hypothesis, idea, line of argument).

Research
Research is another word that academicians constantly use in various contexts. It can be summed up as "a systematic investigation to establish facts aimed at increasing the sum of knowledge" [*Chambers English Dictionary* 1990) and the *Collins Dictionary* and Thesaurus 1992)]. Doing research involves three main steps, namely:
- Starting research,
- Managing research, and
- Reporting research.

Starting Research
Starting research involves the following:
- Clarifying research problem;
- Establishing research objectives;
- Formulating research questions;

- Outlining research methods;
- Conducting literature review; and
- Drafting a concept proposal.

Statement of the Problem
There has to be a description of research topic. This will include:
- Background information,
- Evidence/prior research.
- High priority, and
- Magnitude of the impact.

Research Objectives
The research objective deals with the question "what is to be achieved through research?"
- Provide basis for detailed design of the research;
- Allow evaluation of the research; and
- Provide criteria to measure the outcomes.

The general objectives give the overall aim of the research. There should be only one or two. On the other hand, the specific objectives are the concrete processes in the research, which are directly addressable by the methodology and which are followed in order to achieve the general objective(s).

For example, the general objective in a doctoral thesis could be to examine the fundamental determinants of the real exchange in Nigeria, while the specific objectives are to:
- analyse the determinants of the real exchange rate in Nigeria,
- assess their relative effects on real exchange rate, and
- evaluate the effects of alternative policy measures on the real exchange rate (Yekini 2004).

Research Questions
Research questions are derived from the research objectives. They provide direction of the research methods, i.e.
- hypothesis tests
- data requirement/acquisition
- data analysis

Questions should be about size or magnitude, order, probability (error and bias), relationship or causality.

Research Concept and Framework

The various dimensions of research include among others the following:

· Examination/investigation
· Experimentation
· Exploration
· Fact finding
· Groundwork
· Inquiry
· Probing
· Scrutiny
· Analysis

It is, therefore, implied that the framework of a sound research will include the following:

· adequate experimental design and conceptual framework;
· adequate knowledge of previous work carried out by other workers in that field of study;
· competence in executing the proposed concept or research process;
· orderly data collection which may involve bench work, clinical tests, the use of well authenticated questionnaires (instruments) etc.;
· analysis of data to pave the way for a balanced interpretation of the results;
· a sound argument and presentation of the emerging facts to highlight the specific nature of the contribution of the research to knowledge.

WRITING A THESIS

How do I know what I think
Until I see what I say?
-E.M. Forester, in Scott and Garrison (2002:17)

This quotation reminds us that any form of writing is basically an act of communicating not only with others but, per-

haps more importantly, with ourselves. In other words, writing is one of the best ways by which we learn. The common notion that we write in order to indicate what we already know, or that learning ends when we begin to write for the benefit of the reader, does not totally reflect reality. On the contrary, we continue to learn even as we write, often coming to a new understanding of our subject.

> I believe in miracles in every area of life except writing. Experience has shown me that there are no miracles in writing. The only thing that produces good writing is hard work.
> *I. S. Singer, in Lunsford and Connors (1992).*

The second quotation reminds us of the obvious but often ignored fact that writing is 90 percent perspiration and 10 percent inspiration. Taken together, the two quotations remind us of what we need to do as we set out to put pen to paper to report our study or the accompanying abstract. These include the following in a general sense (Scott & Garrison, 17-21).

When you set out to write:

· Remember that you learn by writing.
· Challenge yourself – Remember that writing is a struggle.
· Remember: everybody has writing skills. Yours will get better the more you use them.
· Maintain enthusiasm for your work.
· Challenge yourself; think usefully about your topic.

As you keep to these rules, it is important to note that all aspects of thesis writing, including abstracting, seek to do two things: they seek:

· to inform and
· to persuade

Emphasis in the blend shifts from one goal to the other as the writer moves from one task to the other.

Elements of Persuasive Writing

The goal of informative (or expository) writing is simply to impart information about the subject of investigation. Persuasive writing seeks to convince the reader of the author's particular point of view or to influence the audience's opinion. Obviously, this can be done only through a careful blend of substance or content (information) with form or style of communication. Key elements here include the following (Scott & Garrison, 22-28).

· Define your purpose.
· Know what you want to say and keep an eye on your own biases.
· Define your audience.
· Be inventive in the discovery and recovery of what you already know about your topic.
· Do not wait for inspiration – always set time limits for yourself.
· Brainstorm with yourself – compile all ideas that occur to you on the topic as quickly as possible.
· Organize your thoughts.
· Be flexible as your writing progresses. Do not be a slave to your initial assumptions.
· Stay objective and self-critical.

With the concept of a research at the background, the first step in writing a thesis is the choice of a title. This title should be clever, brief and thought-provoking. Examples of carefully-chosen PhD titles in the University of Ibadan as considered and approved by the Executive Committee of the Postgraduate School in January 2005 are given below:

Original title	Modified title	% reduction	Reference
Lucan teaching on the poor in the context of the Redeemed Christian Church of God's programmes for the poor in Lagos (Word count: 21)	The Redeemed Christian Church of God's programme for the poor in Lagos in the context of Lucan Teaching (18 words)	14	Oguntoyinbo-Atere (2005)
Customary land law in south-western Nigeria: relevance and need for wider application (12 words)	Evolution, develop-ment and travails of customary land law in south-western Nigeria (11 words)	8	Adekunle (2005)
Globalisation and labour: a case study of the Nigerian Labour Congress (11 words)	Globalisation and the Nigerian Labour Congress (6 words)	45	Adenugba (2005)
Outcome of reproductive health educational intervention on drop-out rate due to unwanted pregnancy among selected rural secondary school students in Osun State, Nigeria (23 words)	Unwanted pregnancy and drop-out rate among rural secondary school students in Osun State, Nigeria (14 words)	39	Adegbenro (2005)

It can be observed that in each case the modified title is shorter and more concise than the original title.

Put together, therefore, to write a dissertation based on an original idea in a chosen field, that is systematically packaged to enhance the body of knowledge is not a trivial job. The "writing-up" is mainly a compilation of and presentation of the emerging new facts from the research. This write-up must have a focus in which are embedded the following:

- New knowledge,
- Understanding and appreciation of the field of study.
- Critical analysis of related work (as it relates to the field of study).
- A package information designed for the benefit of the reader and not for the writer
- A footnote to point out the direction that the work will go from where the candidate has stopped.

The hallmarks of writing a doctoral thesis include the following:

(a) Have a "thesis" of the thesis. A doctoral thesis should be summarized in at least one sentence. This avoids long, tortuous repetition which ultimately confuses the candidate.

(b) Clearly define the research problem at a very early state in the research process and find the solution as the thesis is written.

(c) Start writing a first draft early, based on preliminary conceptual maps. This will need revising, editing and re-writing. This editing/correction helps the super-visor convey a message to the candidate right from the outset.

Layout of a Doctoral Thesis
The ultimate aim, however, is to:

1. present the hypothesis and research problems that have arisen probably from previous works,
2. highlight the results of the methods employed in tack-ling them,
3. present the results of the method employed,
4. interpret these results in the light of the new solutions and/or findings,
5. conclude the research based on the results, bring to the fore the problems yet unsolved and proffer the way forward.

A typical outline of a doctoral thesis is shown below:

Questions/issues to be addressed	Chapter/section of thesis
Why am I doing it?	Introduction / Significance
What is known? What is unknown?	Literature review Review of research / Identifying gaps
What do I hope to discover?	Aims
How am I going to find it?	Methodology
What have I found, and what does it mean? Or what do they mean?	Results Discussion
So what? What are the possible applications or recommendations? What contribution does it make to knowledge? What next?	Conclusions

This layout sums up the thought process and arrangement of facts. It may be followed in this pattern in some disciplines or it could be implied as it provides for easy sequencing and logical reasoning.

Abstract

An abstract is a summary (usually not more than 500 words) of the contents of a thesis or any other document. An abstract, by definition, is both informative and persuasive.

The dos and don'ts of abstract writing

- Stress content and not intent in a four-part outline indicating:
  - The principal objectives and scope of the research (What was done? Why was it done?).
  - Methodology (How was it done?).
  - Results (What was found?), and
  - The principal conclusions (Significance of findings?).
- Assume your reader is knowledgeable.
- Avoid the use of passive voice.

Keep the abstract short.
- You can name authorities but make no reference to specific literature.

An Example of a well-written abstract is shown below (Yekini 2004)

ABSTRACT

There has been persistent depreciation of the naira exchange rate since the mid-1980s. Although the monetary authorities have implemented various policy reform measures, a stable exchange rate is yet to be achieved. Against this background, the study examines the fundamental determinants of the real exchange rate in Nigeria. The specific objectives are to: analyse the determinants of the real exchange rate in Nigeria; assess their relative effects on real exchange rate; and evaluate the effects of alternative policy measures on the real exchange rate.

Compared to previous research, this study breaks new ground by evaluating the effects of such fundamental determinants as measures of capital flow, domestic capital accumulation, price of crude oil, etc. and by carrying out a simulation exercise aimed at gauging the effects of policy changes.

This study used a macroeconomic model composed of six equations. Ordinary least square technique was employed for the estimation of the model equations over the period 1970 to 2000. This enabled the study to cover the policy shifts over the periods before, during and after structural adjustment. A simulation exercise was also conducted to test the effects of alternative policy measures on real exchange rate. The simulation exercise was conducted using nominal exchange rate, aggregate credit and domestic capital accumulation based on government policy targets. These policy targets were based on the macroeconomic environment in the respective fiscal years. Time series properties of the variables used in the model were examined. Further, long run properties of the variables were examined. The existence of co-integrating relationship informed the estimation of short run dynamic model.

The results revealed that the major determinants of real exchange rate are terms of trade, government consumption of

non-tradables, domestic capital accumulation, growth in domestic credit, capital flow, nominal exchange rate, technological progress and crude oil prices. The terms of trade are negatively related to real exchange rate at 5%level, and this is an indication that improvement in terms of trade leads to appreciation of real exchange rate. Also the effect of oil price on real exchange rate movement is negative at 1% level. This shows that increase in crude oil earnings leads to appreciation of real exchange rate.

Further, the results reveal that improvement in capital inflow will appreciate real exchange rate while nominal exchange rate appreciation leads to appreciation of real exchange rate. The in-sample simulation results show that nominal exchange rate depreciation leads to the depreciation of real exchange rate, while growth in domestic credit leads to appreciation of real exchange rate. The out-of-sample simulation results show that growth in these variables leads to depreciation of the real exchange rate.

The overall lesson from these findings is that the design of fiscal and monetary policies (which affects some of the significant determinants of real exchange), and their implementation should be more consistent and effective if persistent depreciation of naira exchange rate is to be addressed.

Keywords: real exchange rate determinants, macroeconomic policy reforms, Nigeria
Word count: 480

Introduction

What is the topic and why is it important? State the problem(s) as simply as you can. Remember that you have been working on this project for a few years, so you will be very conversant with it. Try to step back mentally and take a broader view of the problem. How does it fit into the broader world of your discipline?

The introduction should contain information on the following issues:

· Background to the research
· Research problem and hypotheses

- Justification for the research
- Methodology
- Outline of the thesis
- Definitions
- Conclusions

Literature Review
What is literature review about?

- Literature review serves as the source of specific knowledge, research topic, conceptual framework and research methods.
- It is all about conducting information search to solve a research problem.
- It acts as a bridge between what is known and unknown about the research problem.
- It is a vehicle for illustrating why and how the study can be carried out in terms of methodology and the current state of knowledge in the problem area.

The literature review should contain only prior research works and advanced materials. Review of basic theories is a pre-requisite for the research not a part of it.

Sources of Literature
The sources of literature in a research will include the following:

- Theses, dissertations
- Journals
- Academic working papers
- Advanced textbooks or monographs
- Encyclopedias, Handbooks.

The following guidelines are useful in preparing a literature review. These are not to be followed question by question, but the researcher should let them simply inform his/her thinking.

- What issues does the writer regard as pertinent?
- What seems to be the purpose of the article?
- What assumptions about the topic or theory seem to

underlie the article?
· How do these assumptions compare with the assumptions of others who have studied the same topic from other perspectives?
· What is the value of this approach i.e. in what context might this approach be useful?
· What sort of methodology did the scholar use?
· What is your assessment of the article?

Questions to be addressed by the literature review section
The literature review section of a PhD thesis should address the following four questions:

· Where did the problem come from?
· What is already known about the problem?
· What are the methods used so far to solve the problem?
· What suggestions do previous studies recommend for further studies?

A robust and insightful literature search that provides answers to the above would not only enrich the understanding of the researcher in relation to the research problem but also enables him/her to avoid the mistakes of previous studies.
Case Study
For example, a thesis on Democracy, Governance and Human Rights in Africa grouped its review of literature into the following sections: (Has s/he answered the four questions above?)

(i)   Decentralization in African History: sketches the development of decentralization and thus trying to answer the question, 'where did the problem come from?'

(ii)   Why decentralize? Examining various justifications behind decentralization reforms. The section is also based on the review of literature in order to answer the question of the origin of decentralization.

(iii)   Dimensions of decentralization: Here the review looks into how decentralization is being structured around actors, powers and accountability relations. In other words, the section is reviewing literature in order to answer the question on what is already known about the problem.

(iv)   Implementation of decentralization. Here the various methods used so far to solve the problem of decentralization in the literature are explored including the enabling environment, planning, oversight etc.

(v)   The last section of the review sets research priorities based on the gaps in knowledge identified in the previous sections.

Problems with Some PhD Theses

· Unfortunately, the reviews of literature section in most doctoral theses are often clumsy, make dull reading and are excruciating torture for most examiners and readers.

· If the review section is well written and documented it may be publishable with few editorial work and possible updating.

Matters Arising

· Indeed some journals such as the *Review of Educational Research* are exclusively devoted to such critical retrospectives on scholarship.

· Therefore, there is the need to provide some useful tips on how to write a good literature review section of a doctoral thesis.

Useful Tips on How to Write Literature Review Section of a Doctoral thesis

· Keep up with the literature in your area of study and

- make notes about important papers throughout the duration of your doctoral programme.
- Read extensively in the area that either is directly or indirectly related to the topic of study. When you read about a topic related to your area of study, write down the following about what you have read. The title, author(s), year, volume and pages.
- Make a concise summary of the main arguments in the literature you have read in your own words.
- Do not concentrate on research findings when reading research articles, thus overlooking valuable information on methods etc.
- Whatever arguments must be sustained in the review of the literature, there is no place for "Adeogun says this…" and "Livingstone says that…".
- Such paragraph-by-paragraph recital makes the literature review section very boring to read and has the tendency for dulling the senses. Note that a literature review is not just a catalogue of works.
- Make sure you read relevant papers about your likely examiners or potential employers.
- There is no limit to the number of papers to be included in this section but all relevant papers read must be included in a logical order depending on the purpose of study. For example, the review could be approached chronologically so that the trends in the development in the area of research could be followed.

Last part of the Literature Review section
In most cases, the concluding section of a review should be able to identify the gap in knowledge the doctoral student intends to fill.

Methodology
The methodology section of any doctoral thesis, whether it is an empirical research or not, must be able to answer the question '*How am I going to do it*?'. This section describes the ways the study was carried out, the instruments used and the analytical techniques used in the data analysis. It is the easiest section of the thesis to write because it usually contains

the writing down of what the researcher did and how he did it. In most science-based disciplines it is an important section because the methodology selected for a particular research determines to a large extent the quality of data obtained.

Issues to address in Presentation of Methodology
The issues to be addressed in the section on methodology include the following:
- The research design
- The sources of data (primary, secondary, archival etc.)
- The procedure for collecting the data, and
- The analysis of data.
- In general, the methodology section of a doctoral thesis must provide a step-by-step set of procedures used for conducting the investigations. The section must be written carefully, formally and in a logical order.

For most science-based and other empirical research, the methodological section must contain the following:
- identification and description(s) of the target population and sampling technique used;
- presentation of instruments and techniques for measurement;
- presentation of a design for the collection of data;
- presentation of procedures for collecting and recording data;
- explanation of data analysis procedures used; and
- development of plans for contingencies such as subject mortality.

Results and Discussion
There are two major modes of presentation of results:
- the pictorial and
- the rhetorical.

The mode of presentation of results will vary from one discipline to another, from one research subject to another. The presentation of results in Economics is likely to require the use of tables, graphs and diagrams; a thesis in Literature

or Religious Studies is less likely to contain these. [Sometimes the pictorial and rhetorical modes are used together because they are mutually supportive.]

- To begin with, you need a thesis statement to enable you organize your results into a coherent body of information.
- The thesis statement is an encapsulation of the details to come and the point of view of the researcher. [Having a thesis statement helps you maintain focus on your research objective. The thesis statement could change or be modified several times in the course of the writing of your draft(s) as fresh problems and insights emerge.]
- Whatever is irrelevant to the thesis statement may distract you or weaken your discussion in the text; it should therefore be left out of the text. [This is often difficult for researchers because of the impression they stand to make with the accumulation of data. Such a sentimental attachment to data should be avoided by the researcher. He/she should be consoled by the fact that such materials which are left out are not necessarily useless; they could ultimately form the kernel of other/postdoctoral publications.]
- Results should be presented logically, if your points are to be made effectively.
- For [you to achieve] coherence [which means *sticking together logically*] (White 267), you need to follow your outline. In that regard, the items should be arranged with regard to their connectedness. This will require that you organize them under sub-headings. Find the connections between the sub-divisions to arrive at the coherence of the whole presentation. [To enhance coherence and fluency of your paper "you may need to add transitions (bridges) between sentences and paragraphs or to define connections or contrasts" {Gibaldi 40}]

Organizational Plan

- In discussing your results, decide on and always keep in mind the method(s) you intend to use in your pres-

entation. This should be considered when you are drawing the outline of your thesis. That is to say that your outline will be determined by a consideration of your set objective and the approach by which you intend to get there.

Do you want to define? To define something entails setting boundaries or limitations. A *categorical* (dictionary-type of) *definition* requires that the item to be defined be identified as belonging to a certain class and is then distinguished from other members of that class. The advantage of this is that it makes for brevity and detachment. You could then go from this type of definition to a stipulative definition which goes beyond "the general meaning of the subject (item) to include *particular* insights or applications based on the writer's own experience or reasoning." This "places emphasis on the writer's individual insights and experience with the subject in question" and enables him/her elucidate and illuminate a concept. Writers frequently use *operational definitions* whereby emphasis is moved from what the subject/item *is* to define what it *does*. There is also *lexical definition* whereby the writer examines the nature of the word itself, supplying its etymology (theoretical or known origin) and possibly the evolution of its usage. For instance, a lexical definition of microscope would call attention to its derivation from the Latin word *micro* (Greek, *micros*), meaning 'small'; and from the Latin word *scopium*, which was derived from the Greek word *skopein*, meaning 'to see'.

Narrate: This involves the principle of storytelling, the presentation in the form of a story of personal experience which is true, or of fiction, invented experience which gives the impression that it *could* be true. "Narration plays a vital role in informational writing… It is the rhetorical technique that conveys the history of the subject at hand." "Since every subject has a history, historical narration is relevant to every subject,

without exception." Illustrations (tables, diagrams, charts, maps, etc.) present data succinctly even pictorially and so are interesting, even absorbing, but their effectiveness is enhanced when the same data are presented in an even more absorbing manner, as in a story. They make for greater involvement of the audience/reader than illustrations do.

Describe: Description has an evocative power which "enhances a reader's involvement with the subject/material." This "makes it an important rhetorical technique for conveying information." It may be used to enhance the reader's "understanding of a natural phenomenon or process." Description may include comparison: How is X similar to Y? How is X dissimilar to Y? Descriptions that answer such questions contribute to a broader understanding of the subject at hand].

Classify: This is a way of defining a subject by placing it in a category or class, before going on to distinguish it from other members of that category/class. As a rhetorical technique, classification puts emphasis on the logical principles that reveal why the item in question belongs to one category and not to another. For example, living organisms are classified into family, genus, species, order, class, phylum, kingdom, etc. Such a classification scheme simultaneously identifies an organism by its genus name and its species name, as well as demonstrates its relationship to other organisms.

Divide: This is another way of defining a subject/material by identifying its constituent parts, thus providing additional insight into its nature. For example, one can classify a tree by species - palm, oak, *iroko*, etc - even by subspecies – date-palm, oil-palm and raffia-palm etc. But a particular tree is also talked about by dividing it into its parts: root system, trunk, leaves, etc. Usually these parts are referred to in terms of

their "*interrelationship* into an organic whole."

Argue: Argument is necessary when one seeks to validate or contradict an existing idea or position, often with the aid of supportive data. In other words, to argue entails providing reasons to show that something is true or untrue. In adopting this method, the onus is on the researcher to convince the reader about the validity of his stated position. When you argue, strive to convince your reader that your stance – especially on a controversial issue – is more sensible, more beneficial, and more ethical perhaps than the position taken by those with opposing views(White, 160-1), hence the emphasis on logicality of presentation.

Analyse: A subject/material may be defined and classified, its appearance and function/value described and its historical background told but the reader would still not understand its process. This problem is solved by analysis which entails probing the nature of the subject with a view to determining how or why it works. The nature of a rock, its constituent elements, history, will not alone tell us *why* there is the phenomenon known as earthquake or *how* it occurs. But by describing the tensions inherent in the history and composition of the rock and the interpenetration between these and the larger environment a process is initiated which leads to earthquakes or volcanic eruptions, etc one is stressing cause and effect. This is the stuff of analysis. When the subject is technical, rare or exotic, the analyst uses analogy: a comparison between the subject or phenomenon being analyzed and an object or phenomenon which is considered to be much more familiar to the reader. The use of appropriate and vivid diction facilitates analysis. An analytic write-up on a given subject identifies and describes the parts of that subject and then goes on to show how the parts interact to create the whole (White 111).

Organizing Principles

· Depending on what the subject of the research is, any of the following principles could determine the structure and effectiveness of the presentation:

  — **Cause and effect:** This stresses the relatedness of things, enhances understanding of a process and the idea of organism or sense of system.

  — **Chronology:** This stresses order (natural order/ sequence) with regard to time and is linked with cause and effect.

  — **Logic:** This could be a deductive line of argument which moves from the general to the specific {e.g. from corruption in the Nigeria Police Force to the shooting of recalcitrant drivers at police checkpoints). An inductive line of argument moves from the specific to the general (e.g. from the shooting of recalcitrant drivers at police checkpoints to corruption in the Nigeria Police Force).

· Where empirical investigations, physical surveys and computations are carried out the data generated are presented as illustrations in the form of diagrams, tables, graphs and charts.

· Sometimes illustrations are given as maps and photographs.

· The illustrations to be used should be assembled and arranged in the order that the researcher is going to use them.

· When they are required, such charts, maps and photographs are selectively presented. Figures which repeat data need not be used more than once. However, the frequency of recurrence should be noted and explained.

· Minor variations in the available charts and figures should be summarized rather than be included. The significance of such variations should be noted and explained.

· Details contained in the charts, plates, maps, or figures do not have to be restated in the text.

· Scales of and keys to maps should be indicated to

facilitate the reading of these. Axes and other keys to the reading of graphs/charts etc should be given. Any magnifications of plates and appropriate units of measurement should be stated.

· Indicate explanatory footnotes by placing standard footnote reference markers (*, +, #) after words or numbers of the illustrations (Figures and Tables) they refer to.

· Binomial names of plants and animals should always be italicized or underlined.

· Always be mindful of your objective.
  – Are you aiming at breaking new grounds?
  – Are you expanding the scope of an existing position?
  – Are you persuading your audience to accept a position?
  – Are you explaining, describing or arguing?

· Relate your results and discussion to the literature review.

· A discussion of the results should take into cognisance the conditions under which they (the results) were obtained.

· Be mindful of your audience – its composition, specialization, etc.

The various methods are not mutually exclusive but reinforce one another.

The presentation of results and the discussion that goes with it require painstaking attention to details, relevance, relationships. Usually several drafts are made in the course of re-evaluating past work or positions held, revising the conclusions, and the general worth or validity of the study. These drafts need to be preserved separately, at least until the study is presented officially and approval is given to it. The availability of the computer and word processing make revisions less cumbersome.

Final Chapter, References and Appendices
Conclusions and Suggestions for Further Work
A summary of conclusions is usually longer than the final section of the abstract, and you have the space to be more

explicit and more careful with qualifications. You might find it helpful to put your conclusions in form of points.

Many researchers hesitate to impose their interpretations and conclusions on the reader, especially when they pertain to the significance of their results. Unfortunately, without them, the reader can only wonder why he read the thesis. Examiners in particular are unlikely to ascribe any more significance to a thesis than the author gives it. The conclusions section should include:

· The principles, relationships, and generalisations inferred from the results (but not a repetition of the results),

· Any exceptions to or problems with these principles, relationships, and generalizations as indicated by the results,

· Agreements (or disagreements) with previously published work,

· Theoretical implications and possible practical applications of the work, and

· Conclusions drawn (especially regarding significance), with a summary of the evidence for each conclusion.

It is often the case with scientific investigations that more questions than answers are produced. Some of the questions or issues that can emerge, under the discussion of recommenda-tions for further work, include:

· Does the work suggest any interesting further avenues?

· Are there ways in which the work could be improved upon by future workers?

· What are the practical implications of the work?

This chapter should usually be reasonably short—a few pages perhaps. As with the introduction, it is a good idea to ask someone who is not a specialist to read this section and to comment.

References
The style of referencing is described in detail in Chapter 10 of this book.

Acknowledgements

All those individuals and institutions who have contributed to the success of the research should be thanked, but this section of the thesis should be brief.

Appendices

If there is any material that should be in the thesis but which would break up the flow or bore the reader unbearably, include it as an appendix. Some things which are typically included in appendices are:

· important and original computer programmes,
· data files that are too large to be represented simply in the results chapters,
· pictures or diagrams of results which are not important enough to keep in the main text, and
· research instruments

SUMMARY
Causes of failure of a thesis

· poor presentation / writing / communication
· 'unoriginal research'
· wrongly conceived topic
· poor structuring of an argument
· inadequate bibliography
· poor supervision

In writing your thesis, prepare *a first draft* that includes all the

· data,
· arguments, and
· conclusions which you had planned to cover.

Then, edit your manuscript carefully. From the reader's point of view;

· Is the text clear?
· Are the figures thoroughly integrated with the text?

Go through this process at least twice, having a new draft typed each time. When you are satisfied, test your success on

a colleague, preferably one who is not well acquainted with the subject matter. *Be prepared for criticism.* If one reader does not understand parts of your text, others will have the same problems. Remember, you are thoroughly acquainted with your subject; your reader is not.

Remember that "*Good writing will not save a bad idea, but bad writing can kill a good one*".

REFERENCES

Adegbenro, C. A. In preparation. *Unwanted pregnancy and drop-out rate among rural secondary school students in Osun State, Nigeria.* PhD thesis, University of Ibadan.

Adekunle, T.K. in preparation. *Evolution, development and travails of customary land law in south-western, Nigeria.* PhD thesis, University of Ibadan.

Adenugba, A. A., In preparation. *Globalisation and the Nigerian Labour Congress.* PhD thesis, University of Ibadan.

Gibaldi, J.1999. *MLA Handbook for writers of research papers*, 5th ed. New York: The Modern Language Association of America.

Lunsford, A. & Connors, R. 1992. *The St. Martins Handbook*, New York: St Martins Press.

Oguntoyinbo-Atere, M.I. In preparation. *The Redeemed Christian Church of God's programme for the poor in Lagos in the context of Lucan Teaching.* PhD thesis, University of Ibadan.

Scott, G. & Garrison, S. 2002. *The political science student writer's manual*, New Jersey: Prentice Hall.

White, F. D. 1986. *The writer's art: A practical rhetoric and handbook*, Belmont, California: Wadsworth.

Yekini, T. K. 2004. *Real exchange rate determinants in the context of macroeconomic policy reforms in Nigeria.* PhD thesis, University of Ibadan.