

“Take knowledge from the mouths of men”

Abdulhamid Ibnu Badis

Dear students,

In these hard times of (COVID-19), university teachers have but to accompany you by means of sending to you some notes which would help you stay up to date with your studies. But, before that, let me advise you to stay home and keep distant to avoid any eventual contamination (may God protect you). Let me also tell you that (COVID-19), the full reading of which is Corona Virus Disease 2019, has no vaccine and no medicine yet. The only way to fight it is to be kind enough to stay home and go out only when necessary.

Dear students,

“**Research Methodology**”, our main concern here, is needed in the writing and organization of a dissertation or a thesis. This module is, hence, to introduce you to your next year’s Master 2 dissertation. This is only because your next year’s dissertation is probably the longest piece of writing you have ever done. The following notes may help you work out what you should do and what you should not; what you should include and where to include it (some theoretical lectures for further reading and some references will be given to you by the end of these notes).

It should be noted that research sharpens your wits and helps you look at the world around you with critical eyes. It also teaches you how to be objective in your life and that objectivity is the key for science. It should also be noted that choosing a topic to work on and stating a problem are all what research is about. Below are some basic and common elements that are to be present in any piece of research, be they related to form or content:

- **Originality:** A dissertation is a formal paper that aims to prove that you have introduced an original contribution to knowledge. If you fail to prove that, it means that your contribution is a failure. To this end, you must show that you have identified a worthwhile stated problem which has not previously stated or asked question which has not been previously answered. You must also show that your contribution to knowledge lies in the solution of the problem or answer of the

question. To show that your contribution is original and has a value, you must introduce a literature review to make it clear that your topic has already been given importance by prominent writers and, hence, deserves investigation.

- **References:** You should make sure that the list of references contains the most important works of the field. You might also do well if you include the works of your examiners if they have written in the domain of your topic. This will help you gain their sympathy and guess what questions they might likely ask, and by this you might find it easy to answer their questions.
- **Systematicness:** All along your dissertation you have to be systematic. That is, you stick to only one style or format from the beginning of your dissertation to the end.

The most adopted styles at the level of our university are:

1- **MLA** style 2- **APA** style.

- **MLA style** is, in its full reading: Modern Language Association. It was founded in 1883. The most recent version of MLA format is the eighth edition. It was released in 2016.
- **APA style** is, in its full reading: American Psychological Association. It was founded in 1929. The most recent version of APA format is the seventh edition. It was released in October 2019.
- The main objective of these styles is to avoid **plagiarism**. Plagiarism is the fact of using someone else's ideas, works, language, thoughts or expressions in your writing, without citing them of course (taking them as if they were yours). It is to be noted that peoples' original works are considered intellectual properties and are protected by laws. Plagiarism is considered an act of fraud. It is simply an act of stealing. Plagiarism can only be avoided by citing sources or acknowledging that such an idea or thought or language or expression belongs to X or Y. However, common knowledge remains always debatable.

Now that you have succeeded to choose an original topic to work on and that you have sufficiently read about it and that are ready to take into account the points mentioned above, you can now get started on your dissertation.

From General Introduction to General Conclusion

To start with, a writer of a Master dissertation should bear in mind that there should be a general introduction and a general conclusion and that each chapter should have an introduction and a conclusion. The general introduction introduces the whole dissertation and the general conclusion concludes the whole dissertation. Chapters' introductions and conclusions introduce and conclude chapters.

In terms of form, the general introduction should provide a **background of the study** which would focus on why your research is worth doing. This can be done successfully if you manage to identify the gap in the research and the problem that needs addressing. In the background of the study it not enough to say that you find the topic interesting; the writing of a dissertation needs to go beyond being “interesting”. It needs to show why there is really a need for this research. Then you need to state in your background some prominent authors that you believe are influential to serve as supporters of your research and you need to briefly state why they are influential and how this fit together in relation to your overall topic. Key terms of your study also need to appear in the background to help the reader understand your dissertation. The background of the study should be as concise as possible – in terms of pages, it is preferable to make it less than one page. That is, what you are required to do in this section is to provide only basic information that makes the reader appreciate your research in context.

Problem Statement

A problem statement is any area of concern that seems to be out of norm or nonstandard or a gap in the existing knowledge that need further investigation and understanding. That is, a problem statement aims at converting a generalized problem into a well-defined problem, a solution that comes via focused research. A problem statement can be a question that needs a convincing answer and that can lead to further research. In the problem statement the researcher should describe and explain how a given condition or a current situation falls short of the norm or the ideal. He/she should describe how the condition or the situation should be – look for the ideal, and, of course, should show the proposed way or ways to reach the goal or the ideal. Like the **Background of the Study**, the **Problem Statement** need not be long and elaborate – one paragraph would be enough.

Aim of the Study

In the aim of the study, the researcher briefly says what he hopes to achieve at the end of his/her research work. The aim of the study can be expressed in not more than one sentence. It is generally stated in broad terms. A dissertation usually needs an aim (singular) and **objectives** (plural) which are stated in specific terms.

Research Questions and Hypotheses

Research questions and hypotheses are basic in any research work. They are a scientific method whose primary components are the process of beginning with an observation and a description of a phenomenon. Those observations lead researchers to ask questions about some existing phenomena. Researchers then ask questions on the basis of which put forth a hypothesis or an assumption or a prediction of what will happen or what the outcome of the phenomena will be. Specific types of

experiments will be conducted and are meant to confirm or refute the hypothesis or the assumptions or predictions.

The Difference between Research Questions, Hypotheses and Assumptions

Research questions and hypotheses are used in practically similar ways. Both are present before research begins and are used in the guiding of the research. Research questions are asked when the researcher is wondering about the world. They always take the form of questions (they are used as question forms, not as statements). Hypotheses are also part of the scientific research method although they are not as important as questions. That is, a research work can be conducted without stating a hypothesis – research questions would be enough to begin with. Hypotheses are usually stated in the conditional form; they are often preceded by an “if” clause. However, assumptions are written as statements and are preceded by such expressions as: “it can be assumed”, “it can be predicted...”, although assumptions, hypotheses and predictions are usually used interchangeably.

To conclude, it can be said that the conclusions of research works that are conducted by the use of hypotheses, assumptions or predictions end by stating that these are correct or incorrect, followed by an explanation of the results of the research. By contrast, when the researchers use only a question or questions, he/she has to write the answer or answers followed by the findings of the research.

Research Methodology

The selection of a research methodology is based on the distinction between qualitative and quantitative data. This is why the choice of which methodology to use in your research depends on the research questions; if a qualitative analysis research problem is conducted, the methodology section to use most of the times requires an elaborate description of the methods used together with an explanation of the processes applied in the gathering and analyzing of the data. If a quantitative approach is selected in the analysis of the research problem, statistical designs and tests are applied. This is why quantitative research is considered more scientific than qualitative ones.

Tools of Research

In any research work it is important to decide the tools for data collection because research is carried out for different purposes and in different ways. Things like Case Studies, Interviews, Surveys, and Questionnaires are all tools used for data collection. It is probably a mistake made by our students to take Questionnaires as the most important tools of research. Yet, it can easily be noticed that they are excessively used in research dissertations leading to master degrees. It is evident that qualitative and quantitative research methods stem from the roots of quality and quantity. Qualitative research is rooted on interpretivism and constructivism, both of which stem from the ontological view that reality depends

on one's mental structure and activity (Slevitch, 2011). Quantitative research stem from the ontological view that objective reality exists independently of human perception (Ibid). Qualitative questionnaires rely on the informants' answers through which the researcher seeks to understand other peoples' ideas, thoughts and experiences. They enable him or her to gather in-depth insights on topics that are not well understood. Quantitative questionnaires rely on numbers and graphs and by definition on statistics. They are used to test, confirm or refute hypotheses, assumptions or predictions. By this, they are used to establish generalizable facts about a topic. In sum, qualitative research deals with words and meanings, while quantitative research deals with numbers and statistics.

Structure of the Study

It should be noted that a dissertation is not structured anyhow, but according to some norms. In addition to the general introduction, which is only a heading under which the five or six narrative sections appear – statement of the problem, aim of the study, research questions and hypotheses, design and methodology, it is also a matter of a division of the whole work into theoretical and practical parts or chapters. Each chapter should indicate what it is all about in a brief and concise way and provide sufficient details of its content to help the reader understand every point of the dissertation and to make the link between theory and practice. When the reader comes to the reading of the conclusion, he/she would already know whether or not the asked questions have been successfully answered and the hypothesis has been confirmed or refuted.

Abstract

When the researcher feels happy to have finished his/ her research work, we have to remind them that they still have to write down the abstract. As opposed to what most university students might believe, the abstract is best written at the very end - when the dissertation is completed. The abstract is a short summary of the research work. It should concisely report all that which is given in the research (problem statement, aims, research methodology and tools, findings and results) so that the reader knows exactly what the dissertation is about. Leaving the abstract to the end gives you the opportunity to make sure that your dissertation is well organized and well structured.

In terms of form, the abstract should be written in only one bloc – no indenting and no paragraphing. It should not accede one page. The idea of using personal pronouns is debatable: there are those who hold the point of view of avoiding such subjective expressions as: “I think”, “we believe”, “in my opinion” etc in order not to involve yourself in the research to be objective and, hence, scientific. While there are those who hold the point of view that the abstract reports the researcher's work, and thus, he/ she can use personal pronouns such as “I” and “we” and expressions such as “ I think” “I believe” “ In my opinion” etc...

Research Methodology

Theoretical Lectures for further Reading

Lecture 1

Structure of the Dissertation

Description of the Lecture

The lecture aims at introducing first and second year university graduate students to the nature of scientific paper in relationship with its requirements such as dissertation, thesis, and articles as among the prior qualities of scientific research. Through this lecture students will become familiar with the definitions of dissertation, thesis, article, graduation and post graduation, the distinction, if any, between thesis and dissertation. The emphasis is put on the structure of the dissertation since the target students are expected to end their master degree with dissertation writing. Key content of the lecture counts more on the guidelines of the dissertation in terms of elements and format. The lecture is presented upon the related theoretical matters with the likely practical materials and exercises.

Aims of the Lecture

On successful completion of the lecture, students should be able, among other things, to:

- ❖ Be familiar with the best working definition of the term research papers.
- ❖ Be familiar with the meanings of the dissertation.
- ❖ Be familiar with the meanings of the thesis.
- ❖ Be familiar with the meanings of the article and publication procedure.
- ❖ Understand the differences between the dissertation and thesis.
- ❖ Learn more about the nature of the dissertation as the main focal of the lecture.
- ❖ Have a macro picture and idea about the master dissertation.
- ❖ Learn about the structure of the dissertation.
- ❖ Understand the dissertation division into preliminary pages, general introduction, literature review, research methodology, data analysis and interpretation, results, implications, recommendation, references and appendices.
- ❖ Be familiar to with the techniques and guidelines of writing the different elements of the dissertation

- ❖ Be rightfully in the right learning environment and have the right decision about the research paper to write according to the requirements of the degree being worked on.
- ❖ Explore and pursue all the subsequent lectures on the basis of what they have learned and decided in this lecture.

Introduction

Academic research is, essentially, the writing you have to do for your university courses. Your instructors may have different names for academic writing assignments (essay, paper, research paper, dissertation, thesis, and articles), but all of these assignments have the same goals and principles. A research paper is not supposed to be a torture. Academic research is supposed to be your opportunity to explore something that interests you from your full year's courses. You have freedom to choose a topic, empty pages on which to express your own ideas, and an audience that is interested in reading what you think. In an academic research assignment, you will start by asking a good question, then find and analyze answers to it, and choose your own best answer(s) to discuss in your paper. Your paper will share your thoughts and findings and justify your answers in accordance with logic and evidence. The aim of academic research is not to show off everything that you know about your topic, but rather to show that you understand and can think critically about your topic (this is what earns you a good grade). In addition, you will develop skills in researching, evaluating information, organizing, arguing, responding to others' arguments, analyzing, and expressing yourself clearly in writing in the language of instruction. These skills are all likely to be valued by the target audience. As a response to these final university courses, this lecture details the place and structure of the master dissertation. This is why this guide was written.

1. Issues of Important Terminologies

Many academic degree programs include a piece of academic research such as a dissertation, or extended piece of writing based on broader research and reading. Some schools and departments may define it as a long project. Both your academic subject area and the level of award you are studying for will define what is required for your academic research. Generally, the following summaries identify the key features of the academic writing:

1. 1. Graduation and Post-graduation Studies

1. 1. 1. Undergraduate Research

A dissertation provides a student with an opportunity to develop intellectual independence and to specialize in depth in a topic of interest. Especially in the humanities and social sciences, you will mostly be using secondary sources; that is, the existing scholarship published in journals, books etc. You will then develop your own critical analysis of these materials and their contribution to your research topic. However, some academic subject areas encourage students to use some primary sources or to produce

data, especially – but not exclusively - in the sciences. Such sources/data may include experiments, case studies, questionnaires, or a focused study of selected archival documents.

1. 1. 2. Master Research

Your Dissertation should be an independent piece of work. An undergraduate Dissertation is not expected to be a wholly original contribution to knowledge, but it must be original in the sense of being an independent piece of writing, based on wide reading, and giving evidence of your own understanding and analysis of your subject. It usually covers a narrower field than a course based on lectures and seminars, and requires more thorough reading. Students are expected to demonstrate their ability to engage critically and analytically with primary texts and literary criticism. While the Dissertation topic may vary in scope between individual submissions, all dissertations must have a clear focus with definable boundaries. You will therefore need to find a research question, engage with relevant literature, and plan a schedule. It is very likely that at this level you will have to produce or identify a specific collection of primary sources or data. By conducting your own research, you begin to add to the scholarship already produced and add/develop your own critical analysis on your research topic. Usually, the Masters dissertation is a longer piece of writing than for undergraduate study, requiring more extensive reading and research to put your own critical interpretation of sources into the context of existing scholarship.

1. 1. 3. Doctorate Research

Writing a doctoral thesis such as a PhD requires a student to make “an original contribution” to the existing knowledge on their research topic; that is, it should both identify and fill a gap in that knowledge. Primary source research is therefore a significant element of a PhD, whether this involves consulting archives or historical documentation, or producing empirical data from experiments, case studies, or questionnaires. However, do remember that despite the scale of a PhD (it can be up to 100,000 words in length), your work still has to be focused and the gap you are filling may be quite small even if it is intellectually significant. Despite thousands of books and theses already out there, each year people still find new things to write about the playwright William Shakespeare!

1. 2. Thesis and Dissertation: What is the difference?

The aim of both a thesis and dissertation is to give the student the opportunity to investigate or research a problem using principles and methodologies developed within the Diploma in the related field of interest course. By doing a thesis or dissertation students should master skills in:

- Developing a research proposal to explore a specific research question.
- identifying and accessing the resources necessary to undertake the investigation
- Reviewing and analyzing relevant literature.

- Choosing a research methodology appropriate to the problem and applying that methodology whether it is qualitative or quantitative.
- Reporting the project particularly its purpose, backgrounds, method, findings, conclusions, and recommendations.
- Interpreting the findings and identifying the wider implications of the research project especially on the related sample and population.

1. 2. 1. Scope of a Dissertation

The dissertation counts for half or more credit points and so represents half the requirement for the degree required within the field of interest. The other half is from coursework. A dissertation will not often require primary data collection (see Data Collection below), that is, data collected by the student through interview or survey. It may require analysis of secondary data, that is, data extracted from routine data sources (e.g. ordinary governmental institutions statistics) or data already collected by a previous or wider study. A literature review alone is not usually considered sufficient for a dissertation, unless it is augmented by substantial critical discussion and debate, or with a proposal outlining methodology for new research, or if it is a formal systematic review. Length will vary with the nature of both the topic and the methodology used. It is expected that most texts will be around 80-100 pages, or 20-30,000 words, single-sided, including tables and appendices.

1. 2. 2. Scope of a Thesis

The thesis represents one full time year's work or more and constitutes the full points of the degree of the academic field. The thesis will generally require data collection and analysis. This data will often be primary data (see Data Collection below), that is, data collected by the student through interview or survey, although secondary data may also be permitted, that is, data extracted from routine data sources (e.g. ordinary governmental institutions statistics). The length of the report will vary depending on the topic and method used. It is expected that most texts will consist of up to 200 pages, or 50-60,000 words, single-sided, including tables and appendices.

1. 3. Data Collection

Data analyzed in a thesis or dissertation can be broadly classified in two ways: Primary Sources: Original data – e.g. questionnaire/interviews (with students, experts, key actors, others); or a student's own extraction of data from extant sources (schools or government data). Secondary Sources: Books, articles; sample survey reports; data from studies already done; government/official statistics. Both narrative material and numerical data may be useful to the task. Many dissertations will rely on secondary data while a thesis may require collection of primary data, though this rule is not hard and fast. If secondary data is used, it must be fully referenced and acknowledged. For a dissertation it would not normally be expected that the student would need to go through the Ethics approval process; this being either already obtained or not necessary.

1. 4. “Non-data” Dissertations or Theses

A thesis or dissertation for an academic research will usually entail collection and analysis of data, but it may not. An examination of policy, philosophy, or theory may be sufficient. For a thesis this would need to be an extension of ideas and show intellectual input and novel work of the student. For a dissertation it may entail a detailed examination of existing practices and theories.

1. 5. Articles and Publication Procedures

Writing, editing, and publishing the paper is the last step in the research process. The paper tells the story of the project from inception, through the data-collection process, statistical analysis, and discussion of the results. The dissemination of research results and findings is an integral part of the research process and the career in academia. Researchers write to keep records of their work for themselves, but more importantly for readers and peers who are expecting a standard form, language and style when reading research papers. Writing in a scientific style may be hard in the beginning for novices, but clear communication and concise writing for a scientific audience can be trained (Davis, 1997). Robert Day (1983) defines a scientific paper as “a written and published report describing original research results” (p.1). Day claims that scientific papers have to meet certain requirements regarding *how* the paper was written and the way it is published. He stresses that the process leading to publication is equally important as the content, style and organization of the published paper. According to this view, a scientific paper must be a *valid publication*, i.e. it must be published in the right place, like in a peer-reviewed journal or in a top-ranked conference. The publication outlet nowadays heavily relies on the field of research, for instance in computer science, papers in proceedings of some of the top-ranked conferences are equally or even more prestigious than articles in highly ranked journals, while in the natural sciences, conference publications have little to no value in the track record. Regardless of the publication outlet, a validly published scientific paper must contain the “first disclosure of results with sufficient information to enable peers (*i*) to assess observations, (*ii*) to repeat experiments, and (*iii*) to evaluate intellectual processes” (Council of Biology Editors, 1968, pp.1–2, as cited in Day, 1983, p.2)

Publishing a paper is the logical result of any research project. After all the effort required for design, implementation, data collection, and data analysis, publication is the crucial end point. Publishing serves to share important information with the scientific community and results in personal satisfaction and professional advancement. An author who routinely submits only abstracts without follow-up publication is revealing either a lack of commitment or lack of confidence in study design or results. An important part of the publication process is scrutiny of the design, methods, data collection, and statistical analysis used in the study. Careful review of the study leads the investigator to discover flaws in the process and clarify the original thought process. It is better to identify shortcomings yourself than to have them pointed out for you by a reviewer pre-publication or in a letter to the editor post-publication.

The mechanics of writing a paper are typically spelled out by each individual journal. RESPIRATORY CARE offers an author's guide online. In addition to helping authors meet the journal's formatting requirements; the author's guide also serves as a rough outline for the paper. Using an outline to write a paper may seem like an undergraduate exercise, but the outline is an important tool for organizing your thoughts. This lecture describes the anatomy of a research paper, discusses common practices and mistakes, reviews some science-writing rules, and provides some science-writing tips in applied linguistics field.

2. The Craft of Master Dissertation Writing

The dissertation is the final stage of the Master's degree and provides you with the opportunity to show that you have gained the necessary skills and knowledge in order to organize and conduct a research project. It should demonstrate that you are skilled in identifying an area, or areas, suitable for research: setting research objectives; locating, organizing and critically analyzing the relevant secondary data and authoritative literature; devising an appropriate research methodology; analyzing the primary data selected and drawing on the literature in the field; drawing conclusions; and if appropriate making relevant recommendations and indications of areas for further research.

A dissertation is a 'formal' document and there are 'rules' that govern the way in which it is presented. It must have chapters that provide an introduction, a literature review, a justification of the data selected for analysis and research methodology, analysis of the data and, finally, conclusions and recommendations. Where the subject is based around a business or an applied situation, recommendations for action may also be required. Advice on the range of suitable topics which relate to the subject area of your Master's degree will be approved by your Program Director or course dissertation co-coordinator.

The Masters level dissertation is distinguished from other forms of writing by its attempt to analyze situations in terms of the 'bigger picture'. It seeks answers, explanations, makes comparisons and arrives at generalizations which can be used to extend theory. As well as explaining **what can be done**, it addresses the underlying **why**. The most successful dissertations are those which are specific and narrowly focused.

This document is intended to guide you through the dissertation process. It can only offer suggestions; there is nothing that can be said which will guarantee the production of a fine piece of work, but these are suggestions which, through time, have been found to be both practical and effective. You should read this guide before starting your dissertation and consult it as necessary throughout the process. This will help you to make a start to your dissertation and make more effective use of your meeting sessions with your supervisor. Other useful references specific to your program can also be found for your program on Vision.

Note

These notes have been produced for general guidance only and you are required to read the recommended texts and journal papers on research techniques appropriate to the research methods of your subject discipline. You are not to use these notes as justification or reference for any methodological approaches or techniques in your dissertation.

3. Structure of the Dissertation**3. 1. Preliminary Pages**

This section discusses the components of what is usually found in the preliminary page of a dissertation or any research paper. The material will be presented in the same order as identified in the table below.

3. 1. 1. Front Cover Page or Title Page

See the example for the exact content and format required of the title page. Titles that are more than one line should be presented as an inverted pyramid. The top margin of this page is two inches. This page is not numbered. The date listed at the bottom should be the month and year that the degree will be conferred, not the date the thesis or dissertation was completed. The student's name listed on this page must be consistent with the name on the transmittal form and the ABSTRACT (see template). The information on this page should be in all capital letters. In addition, the front cover page must include all the information listed below.

- The country in which the dissertation is fulfilled
- The ministry of higher education and scientific research
- Spell out the full name of university, institution and the organism to which the dissertation belongs to
- The faculty of the university in which the dissertation is elaborated.
- The department of the university
- The title of the thesis or dissertation must match verbatim the title appear in all section of the dissertation
- Expression that explains the degree of the dissertation
- The full student's name with the degree that have been conferred upon the student, not degrees that are in progress.
- The committee members' name must appear on the front page. List only degrees that have been conferred upon the committee members', not degrees that are in progress with the organisms to which they belong to.
- The year of submission
- etc.

3. 1. 2. Abstracts

Nearly all research papers and journals require the inclusion of an abstract. The abstract appears following the title page. Recently, the *structured abstract* (i.e., an abstract that has five sections: introduction, objective, methods, results, and conclusions) has become the standard for most research articles (whereas reviews, case reports, and certain other types of special articles have non-structured abstracts). The abstract must accurately reflect the content of the paper; nothing can be included in the abstract that does not appear in the body of the paper. Therefore, it is best to write the abstract *after* you have written and carefully edited your research paper. The abstract is a synopsis of the paper, and many readers will never read any more than the abstract, so it is very important that the abstract be absolutely accurate and concisely convey the paper's most important data and conclusions.

The structured abstract demands you, as a researcher, to be concise. Do not include background information, do not use abbreviations or acronyms (unless the acronym will appear four times in the abstract), delete any word that is not necessary to convey information. Don't go too far, however, and eliminate the essential structure and elements that make a complete sentence. Also, don't use phrases such as "Results will be provided," when you could write a phrase that describes a key finding, such as "The treatment group had significantly lower mortality." Don't speculate or include opinion statement in the abstract. The abstract is a "just the facts" presentation of your research.

The abstract's major emphasis should be on the methods and the main results. The introduction or purpose can often be stated in a single sentence. The objective should be stated in an imperative style sentence; for example: "Objective: Compare the moisture output of 2 humidification systems, using a lung model." For the abstract that is plenty. Describe the methods and the main results in 3–4 sentences each. Carefully select the most important data and statistics to show and/or describe in the results section.

Just state the main results. The conclusion, like the introduction can typically be handled in 1 or 2 sentences. Try summing up the findings in the first sentence and then make a conclusion in the second. For our example, "Moisture output from these 2 humidification systems was not statistically different. Both systems meet the standards for humidifiers used during mechanical ventilation." In that example, the objective and conclusions are stated in only 35 words. That leaves well over 200 words to describe your methods and results.

3. 1. 2. 1. Key Words

The key words cannot be picked simply at the author's discretion; instead, they must be terms that appear very frequently in the dissertation of the research paper as the main Subject Headings. It is necessary to search all fields such as the titles, abstracts, journal names, journal volumes/numbers/ page numbers in relationship to the topic of interest in order not to miss documents of interest, and since all the key words appear in the title and abstract and all the other subsequent sections of the dissertation.

3. 1. 3. Dedications

Dedications are optional in theses and dissertations; a dedicatory statement may be included within the acknowledgments. A separate page for a dedication is permissible. The top margin of this page is two inches.

3. 1. 4. Acknowledgments

Acknowledgements are part of the preliminary pages. They must be on a separate page, cannot exceed one page, and should adopt a restrained and decorous tone. This section is reserved for recognizing committee, faculty, etc., who have been instrumental in the student's thesis/dissertation completion. The ACKNOWLEDGEMENTS page should be numbered "ii" or "iii" (depending on the length of the ABSTRACT).

The acknowledgements section names people who contributed to the work but did not contribute sufficiently to earn authorship. Such individuals may include an in-house reviewer, data-collection personnel, statistical consultant, or typist. You must have permission from any individuals mentioned in the acknowledgements section. Do not make long dedications; keep acknowledgements short and to the point (eg, "Thanks to Jane Smith PhD, of the Respiratory Care Department, University of California at San Francisco, for her assistance with statistical analysis."). Statements about financial support of the research and conflicts of interest should *not* be mentioned in the acknowledgements section, but on the title page.

3. 1. 5. Table of Contents

Note that any subheadings within chapters must reflect formal subdivisions with headings in the text of those chapters. Do not list unnumbered preliminary pages in the TABLE OF CONTENTS. Do not include the ABSTRACT in the TABLE OF CONTENTS. The first listed item should be the ACKNOWLEDGEMENTS. The top margin of this page is one inch. The page number should be "iii" or "iv" (depending on the length of the ABSTRACT), one inch from the bottom margin.

3. 1. 6. List of Tables

This page is required if any tables appear in the text. The top margin of this page is two inches. The departmental approved style manual determines formatting for tables. If the manual does not address tables, see the corresponding manuals (latest edition) for an example of a correct format. The page number should be "v" or "vi" (depending on the length of the ABSTRACT), one inch from the bottom margin.

3. 1. 7. List of Figures

This page is required if any figures appear in the text. The top margin for this page is two inches. Departmental approved style manual determines formatting for figures. See for an example of a correct format. The page number should be "iv" or "v" (depending on the length of the ABSTRACT), one inch from the bottom margin.

3. 1. 8. List of Symbols

This page is required if the text holds any symbols which are peculiar to the text or to an extremely restricted scholarly audience. The top margin for this page is two inches. The departmental approved style manual determines formatting for symbols. If the manual does not address symbols, see the approved *Manual* (latest edition) for an example of a correct format. The page number should be “vi” or “vii” (depending on the length of the ABSTRACT), one inch from the bottom margin.

3. 1. 9. List of Abbreviations and Acronyms

This page is required if the text holds any abbreviations and acronyms which are peculiar to the text or to an extremely restricted scholarly audience. The top margin for this page is two inches. The departmental approved style manual determines formatting for abbreviations and acronyms. If the manual does not address abbreviations and acronyms, see the approved *Manual* (latest edition) for an example of a correct format. The page number should be “vi” or “vii” (depending on the length of the ABSTRACT), one inch from the bottom margin.

3. 2. General Introduction

This section describes the conceptual basis for what the researcher will investigate, including the research questions, hypotheses, and basic research design. The introduction develops the significance of the study by describing how the study is new or different from other studies, how it addresses something that is not already known or has not been studied before, or how it extends prior research on the topic in some way. This section should also briefly describe the basic nature of the study and provide an overview of the contents of Chapter 1.

Keep in mind that you will write Chapters 1 through 3 as your dissertation proposal. However, there are changes that typically need to be made in these chapters to enrich the content or to improve the readability as you write the final dissertation manuscript. Often, after data analysis is complete, the first three chapters will need revisions to reflect a more in-depth understanding of the topic and to ensure consistency.

To ensure the quality of both your proposal and your final dissertation and reduce the time, your writing needs to reflect doctoral level, scholarly writing standards **from your very first draft**. Each section within the proposal or dissertation should be well organized and easy for the reader to follow. Each paragraph should be short, clear, and focused. A paragraph should (1) be three to eight sentences in length, (2) focus on one point, topic, or argument, (3) include a topic sentence that defines the focus for the paragraph, and (4) include a transition sentence to the next paragraph. Include one space after each period. There should be no grammatical, punctuation, sentence structure, or APA formatting errors. Verb tense is an important consideration for Chapters 1 through 3. For the proposal, the researcher uses **future tense** (e.g. “The purpose of this study is to...”), whereas in the dissertation, the chapters are revised to reflect past tense (e.g. “The purpose of this study was to...”). Taking the time to ensure high quality,

scholarly writing for each draft will save you time in all the steps of the development and review phases of the dissertation process so make sure to do it right the first time!

As a doctoral researcher, it is your responsibility to ensure the clarity, quality, and correctness of your writing and APA formatting. Your chair and your committee members are not obligated to edit your documents. If you do not have outstanding writing skills, you may need to identify a writing coach, editor and/or other resource to help you with writing and editing. Poorly written proposals and dissertations will be immediately suspended in the various levels of review if submitted with grammatical, structural, and/or form and formatting errors.

The quality of a dissertation is not only evaluated on the quality of writing. It is also evaluated based on the criteria that have been established for each section of the dissertation. The criteria describe what must be addressed in each section within each chapter. As you develop a section, first read the section description. Then review each criterion contained in the table below the description. Use both the overall description and criteria as you write each section. It is important that each listed criterion is addressed in a way that it is clear to your chair and committee members. You should be able to point out where each criterion is met in each section.

Prior to submitting a draft of your proposal or dissertation or a single chapter to your chair or committee members, please assess yourself on the degree to which each criterion has been met. You need to continuously and objectively self-evaluate the quality of your writing and content for each section within the proposal or dissertation. When you have completed a comprehensive self-evaluation of your work, then you may submit your document to your chair for review. Your chair will also review each section of the proposal and dissertation and will determine when it is ready for full committee review. Keep in mind the committee review process will likely require several editorial/revisions rounds, so plan for multiple revision cycles as you develop your dissertation completion plan and project timeline. You will notice in the tables that certain columns have an X in the scoring box. As mentioned above, your chair will score all five chapters, the abstract and the reference list. Your chair and committee members will assess each criterion in their required chapters when they return the document with feedback.

Once the document has been fully approved by your chair and committee, and is approved for, your chair will approve each chapter in the course room. This section discusses the components of what is usually found in the general introduction of a dissertation or master's thesis. The material will be presented in the order as it is identified in the real dissertations.

INTRODUCTION

This section provides a brief overview of the research focus or problem, explains why this study is worth conducting, and discusses how this study will be completed. (Minimum three to four paragraphs or approximately one page)

- Dissertation topic is introduced and value of conducting the study is discussed.

<ul style="list-style-type: none"> • Discussion provides an overview of what is contained in the chapter.
<ul style="list-style-type: none"> • Provide the reader with a clear understanding of the problem in a concise yet complete manner
<ul style="list-style-type: none"> • Articulate that the problem is worthy of further investigation.
<ul style="list-style-type: none"> • Briefly describe how the study will be done
<ul style="list-style-type: none"> • Present the guiding research question or hypothesis for the study
<ul style="list-style-type: none"> • Explain how this study can contribute to the existing knowledge
<ul style="list-style-type: none"> • Describe how the study will address something that is not already known or has not been studied before
<ul style="list-style-type: none"> • Describe how the study will fill a gap in existing literature or research.
<ul style="list-style-type: none"> • Describe how the study extends prior research on the topic in some way

3. 2. 1. Background, Context and Theoretical Framework of the Study

The background, context, and theoretical framework of the study should tell the reader what has happened in the past to create the problem or need today. It is a brief historical overview that answers these questions:

- What do we know?
- What created the problem?
- When did the problem begin, and for whom is it a problem?
- What research has been done?

This section provides information necessary to allow the reader to understand the background of the problem and context in which the problem occurs. The primary objectives in writing this section are

1. (a) to provide a brief overview of research related to the problem;
 2. (b) to identify and describe the key components, elements, aspects, concepts of the problem;
 3. (c) to provide the reader with an understanding of how the problem arose and the specific context within which the problem is occurring; and
 4. (d) To briefly introduce the reader to the theoretical framework and how that framework either supports the proposed study or provides a theoretical context for developing the research problem.
- The length of this section will depend on the complexity of the problem. Many learner-researchers first develop a working draft of the literature review (Chapter 2), since a good portion of this section is a brief summary of the related literature. Typically, background sections are five to eight paragraphs but can be longer for more complex problems or for problems that have an extensive history of investigation.

The context for the study refers to the physical setting of the research and the natural or artificial (simulated) properties of that setting. In some research these properties are called “experimental conditions” or “study environment.” This section should introduce the theory that will provide support

and justification for your study. It will be used to briefly introduce the primary theoretical topics that will be developed in detail in Chapter 2.

The purpose of the theoretical framework is to tie the dissertation together. As the researcher, you should approach the proposed research from a theory or set of theories that provide the backdrop for the work (researchers do not create theory; they use established theory in which to embed their work). This section should describe how this study will relate to existing theories and discuss how the methodology being used in the study links to those theories. Questions to answer: Is the theoretical foundation strong? Are the theoretical sources apparent? Are they appropriate for the topic? Do they need further explanation? Further, the theoretical framework describes a context within which to locate the intended project and suggests why doing such a study is worthwhile. The theoretical framework justifies the methods you plan to use for conducting the study and presents how this research will contribute to the body of knowledge and/or practice. Further, it describes the context within which to locate the intended project and suggests why doing such a study is worthwhile.

The background of the study helps put your project in conversation with other projects on similar topics. Generally, the introduction provides necessary background information to your study and provides readers with some sense of your overall research interest. The background of the study contains a brief reference to literature pertinent to the research study. Include very few references in chapter I -only those that are essential to represent the rationale for the study-. The background of the study introduces the subject under study to a reader who is unfamiliar with the topic area. Specifically, the background of the study presents the major emphasis and significance of the study briefly and in broad terms. It is a good idea to state at the beginning of the chapter what the problem to be investigated is. Thus, the first sentence should begin, "This study was conducted to ..." The background of the study puts the study into the context for the reader, emphasizing why it is important. It is perhaps ideal to aim the material at a person who is knowledgeable of the field, but not necessarily deeply involved in the problem you are studying. A good background of the study should include the following items:

- Establish the general territory (real world or research) in which the research is placed.
- Describe the broad foundations of your study, including some references to existing literature and/or empirically observable situations. In other words, the introduction needs to provide sufficient background for readers to understand where your study is coming from.
- Indicate the general scope of your project, but do not go into so much detail that later sections (purpose/literature review) become irrelevant.
- Provide an overview of the sections that will appear in your proposal (optional).
- Engage the readers.
- Nothing is interesting if you're not interested. Helen MacInness
- Our minds possess by nature an insatiable desire to know the truth. Marcus Tullius Cicero

- A mind that is stretched to a new idea never returns to its original dimension. Oliver Wendell Holmes
- A problem well stated is a problem half solved. Charles Kettering

The table below contains a background of the study from a dissertation.

Background Context and Theoretical Framework of the Study

Since 1920, there has been a geometric increase in the use of educational technology to enhance instructional procedures. The success of this educational technology has been mixed. The classroom technology of the 1980s and 1990s has been computer applications. The estimate for software related to education for 1988 has been given as 500 million dollars (Smith, 1987). Community expectations have no doubt affected the computerization of many schools. There is an estimate of 60 million microcomputers in homes across the US, many of which are used for instruction or skill advancement purposes. Computer Assisted Instruction has become a major educational tool for developing curriculum, and a vehicle for providing instruction. Many educators believe to be one of the most effective ways to improve academic achievement of students. An analysis of over 400 studies (Schwalb,] 982) has shown positive results of Computer Assisted Instruction on student learning.

BACKGROUND, CONTEXT AND THEORETICAL FRAMEWORK

The background section explains both the history of and the present state of the problem and research focus. It identifies the "gap" or "need" based on a summary of the current literature and discusses how the study will address that "gap" or "need." (Minimum two to three paragraphs or approximately one page)

- Describe why the study is being conducted
- Provide a brief overview of research related to the problem
- Identify and describe the key components, elements, aspects, concepts of the problem
- Describe who or what is impacted by the problem or research focus
- Provide the reader with an understanding of how the problem arose and the specific context within which the problem is occurring
- Briefly introduce the reader to the theoretical framework and how that framework either supports the proposed study or provides a theoretical context for developing the research problem.
- Describe and justify the research methods planned for the study
- Briefly describe why the study is being conducted.
- Provides a summary of results from the prior empirical research on the topic and identifies the need as defined by the prior research which this current study will address.

3. 2. 2. Statement of the Problem

This section clearly states the problem or research focus, the population affected and how the study will contribute to solving the problem. A well-written problem statement begins with the big picture of the issue (*macro*) and works to the small, narrower, and more specific problem (*micro*). It clearly communicates the significance, magnitude, and importance of the problem and transitions into the Purpose of the Study with a declarative statement such as “It is not known if and to what degree/extent...” or “It is not known how/why and...”

- Other examples are: It is not known _____.
- Absent from the literature is_____.
- While the literature indicates _____, it is not known in (school/district/organization/community) if _____.
- It is not known how or to what extent _____.

As you are writing this section, make sure your research problem passes the three ROC test meaning your problem is **R**esearchable, **O**riginal, and **C**ontributory!

The Statement of the Problem section presents a formal and succinct statement of the problem to be investigated. It answers the question of WHAT is being done in the study. The writer must establish that the problem is an important one, and that it is feasible to research it. That is, the answer to the problem will lie in the data obtained. Speculative questions require speculative answers and thus do not meet the criteria of a researchable problem. Pick a problem that you have a genuine professional interest in-one that you do not have a personal interest in to the extent that you are out to prove something. Such emotional ties often blind the researcher from the resulting data. In thinking, planning, and writing the problem section, one should ask, "What are the possible results of this research, and what impact will those results have on the knowledge base?" Answers to these questions not only provide insight for the discussion chapter, but also justify the import of the study to the reader. In addition, the general research hypotheses of the study should be clearly implied from the statement of the problem, as illustrated by the following statement. **Never assume the obvious is true. William Safire.** The following two tables present more details about the elaboration of the statement of the problem. The first one presents some techniques while the second one provides a practical example.

PROBLEM STATEMENT

This section includes the problem statement, the population affected, and how the study will contribute to solving the problem. This section is summarized in Chapter 3. This section of Chapter 1 should be a minimum of three to four paragraphs with citations from empirical research articles to support statements. (Minimum three or four paragraphs or approximately one page)

- States the specific problem proposed for research by presenting a clear declarative statement that begins with “It is not known if and to what degree/extent...” (quantitative) ~or~ or “It is not

known how/why and..." (qualitative)
<ul style="list-style-type: none"> • Identifies the general population affected by the problem.
<ul style="list-style-type: none"> • Suggests how the study may contribute to solving the problem.
<ul style="list-style-type: none"> • Clearly describe the magnitude and importance of the problem.
<ul style="list-style-type: none"> • Identify the need for the study and why it is of concern to the researcher.

Statement of the Problem

This study will investigate the relationship between the use of Computer Assisted Instruction and achievement gains in a representative sample of high school students in the US.

This study will be longitudinal in that participants will be studied at two points in time, 1980 and 1986. More specifically, this investigation will test the relationship between the students' frequency of use of Computer Assisted Instruction and their achievement gains on standardized tests and teacher assigned grades in 1980 and the amount of postsecondary education completed in 1986.

3. 2. 3. Research Questions and Hypotheses

This section narrows the focus of the study and specifies the research questions to address the problem statement. Based on the research questions, it describes the variables or groups and their hypothesized relationship for a quantitative study or the phenomena under investigation for a qualitative study. The research questions and hypotheses should be derived from, and are directly aligned with, the problem and purpose statements, research methods, and data analyses. The Research Questions or Hypotheses section of Chapter 1 will be presented again in Chapter 3 to provide clear continuity for the reader and to help frame your data analysis in Chapter 4.

If your study is qualitative, state the research question(s) the study will answer, and describe the phenomenon to be studied. Qualitative studies will typically have one overarching research question with three or more sub-questions. If your study is quantitative, state the research questions the study will answer, identify the variables, and state the hypotheses (predictive statements) using the format appropriate for the specific design. Quantitative studies will typically have three or four research questions and associated hypotheses; mixed method studies can use both depending on the design.

In a paragraph prior to listing the research questions or hypotheses, include a discussion of the research questions, relating them to the problem statement. Then, include a leading phrase to introduce the research questions.

Most research papers include a clear statement of the research objectives, including a description of the questions the research seeks to answer or the hypotheses the research advances. This may be included as part of the introduction or it may be a separate section. Spend significant time brainstorming before and while you draft this section. Once you begin your dissertation research, you may find that your

aims change in emphasis or in number. What is essential for you at this point, though, is to specify for your readers—and for yourself—the precise focus of your research and to identify key concepts you will be studying. A clear statement of purpose will:

- Explain the goals and research objectives of the study (what do you hope to find?).
- Show the original contributions of your study by explaining how your research questions or approach are different from previous research (what will you add to the field of knowledge?).
- Provide a more detailed account of the points summarized in the introduction.
- Include a rationale for the study (why should we study this?).
- Be clear about what your study will **not** address (this is especially important if you are applying for competitive funding; narrowly focused studies are more likely to win funding).

In addition, this section may:

- Describe the research questions and/or hypotheses of the study.
- Include a subsection defining important terms, especially if they will be new to some readers or if you will use them in an unfamiliar way.
- State limitations of the research.
- Provide a rationale for the particular subjects of the study.

RESEARCH QUESTION(S) AND/OR HYPOTHESES

This section narrows the focus of the study by specifying the research questions to address the problem statement. Based on the research questions, it describes the variables and/or groups and their hypothesized relationship (quantitative study) or the phenomena under investigation (qualitative study). It describes how the research questions are related to the problem statement and how the research questions will facilitate collection of the data needed to answer the research questions. (**Minimum two to three paragraphs or approximately one page**)

- **Qualitative Designs:** States the research question(s) the study will answer and describes the phenomenon to be studied.
- **Quantitative Designs:** States the research questions the study will answer, identifies the variables, and states the hypotheses (predictive statements) using the format appropriate for the specific design.
- This section includes a discussion of the research questions, relating them to the problem statement.

3. 2. 3. 1. General Research Hypothesis

The word "Hypothesis" comes from the Greek meaning groundwork, foundation, or support. It is tentatively advanced to explain observed facts or phenomenon. A hypothesis is a shrewd guess, an assumption, an opinion, a hunch, or informal judgment. It helps guide the research methods of the study.

Theory or a substantial knowledge base simplifies the development and defense for hypotheses. Hypotheses cannot emerge from nothing; there must be a rationale for each. Each hypothesis must be testable, and tested with the data collected.

The General Research Hypotheses section presents in general terms the research questions. Constructs are mentioned, not the operational measures of those constructs. The hypotheses should be derived logically from the Statement of the Problem section. A thesis or dissertation usually includes no more than five general research hypotheses. Exhibit 1.5 contains an example of three general research hypotheses from one dissertation. See the table below for sample general hypotheses.

General Hypotheses of the Study

- There is a relationship between the frequency of Computer Assisted Instruction use and achievement test scores when one controls for ability level.
- There is a significant relationship between the frequencies of Computer Assisted Instruction use, instruction received, and assigned grades when controlling for ability level, ethnicity, and gender.
- There is an interaction between the frequency of Computer Assisted Instruction use and ability level in predicting achievement when controlling for ability level.

3. 2. 4. Research Assumptions

Assumptions must be included in chapter 1. Underlying assumptions are present in every research study. Allowing them to only be implicit and not explicit prevents the reader from understanding what the researcher is assuming "to begin with." These assumptions answer several questions: What is the researcher starting with? What is the researcher's view of the phenomenon under study and the methods chosen to study it? What does the researcher believe? What does the researcher accept as knowledge or data?

The stated assumptions place the research in context. They establish the conditions under which the study is assumed to be taking place. As such, these statements protect the researcher's intentions from being misconstrued by the reader. Assumptions describe in a normative fashion what is not necessary to reference to published sources. In other words, assumptions are "givens"; there is no requirement to cite sources, although some researchers might opt to do so. Such phenomena as societal conditions, school structures, data types, and performance systems can be assumed rather than justified with evidence. Say a researcher is investigating whether there is a relationship between anxiety and academic ability. She may assume that an IQ test score reflects the level of academic ability. This assumption is better stated than left unstated and thus unacknowledged or unclear to the reader.

- State the assumptions in a series of numbered sentences, as briefly as possible so that what is assumed is clear.

- In the statement of an assumption, consider stating the reason(s) why it was necessary to make the assumption. If there is a reason for believing an assumption is true, state the reason. If an assumption is questionable, consider casting it as a limitation.

The research question subsumes a particular set of "givens" based on the philosophical paradigm undergirding it. When a researcher is sampling participants from a population and testing hypotheses, there are various assumptions that the researcher should acknowledge. These include the ability to generalize from the sample to the population.

Assumptions differ from "delimitations" and "limitations" but are similar to both. Assumptions are statements of beliefs and knowledge claims within the researcher's mind. They can be thought of as internal. "Delimitations" (constraints imposed by the researcher) and "limitations" (constraints imposed by the results of the data collection process) are statements external to the researcher and more technical and idiosyncratic to the particular study being reported.

- Their real problem was that they assumed themselves able to formulate the questions. And ignored the fact that the questions were every bit as important as the answers. **Robert Ornstein**
- The aim of science is to seek the simplest explanation of complex facts. We are apt to fall into the error of thinking that the facts are simple because simplicity is the goal of our quest. The guiding motto in the life of every natural philosopher should be, "Seek simplicity and distrust it." **Alfred North Whitehead**
- Every great advance in science has issued from a new audacity of imagination. **John Dewey**

The table below contains an assumptions paragraph from a dissertation.

Assumptions
<p>Several assumptions underlie this study. First, the researcher assumes that the participants investigated are a representative sample of high school students from across the country. Second, various applications of Computer Assisted Instruction technology are sufficiently generic in their relationship to learning to combine results and test Computer Assisted Instruction effects on academic achievement gains. Third, it is assumed that the self-reported demography (ethnicity, gender, and grade level) is sufficiently free of error. Fourth, the variance in reported grades is assumed to reflect random effects of bias among teachers. Fifth, it is assumed that the error in student accuracy in reporting grades is randomly dispersed.</p>

3. 2. 5. The Scope of the Study: Limitations and Delimitations of the Research

The Delimitations section focuses on the context or the boundaries of the study. This section is sometimes called the "Scope" of the study. The Delimitations section establishes the limits or parameters that the investigator chooses to include and to leave out. Examples are the population to be sampled, selection criteria, and demographic data included in data analysis. Exhibit below contains an example of a Delimitations section from a dissertation. The Delimitations section should not be confused with the

Limitations section, those factors over which the investigator has no control. Some examples of limitations would be the time of day a class meets, the response rate to a mailed questionnaire, and attrition rate. Limitations are more discussed subsequently as they become apparent after the data has been collected. So the difference between delimitations and limitations are about what is under the control of the researcher's and what is beyond the control of the researcher in the sense that delimitations depends on the researcher's choice while limitations are not. See the table below for more practical details.

- Those who write clearly have readers; those who write obscurely have commentators. **Camus**
- In science, each new point of view calls forth a revolution in nomenclature. **Firedrich Engels**

High School and Beyond database was chosen for this investigation. Along with many advantages, there is much delimitation. Items measure only the degree (quantity) of learners' participations which are used in different courses. No estimate of quality is available. The data are self-reported grades and scores on the Standard Achievement Test.

Since there are six years between pretest and posttest, the sample is delimited to those students who were available both times. The sample does not contain participants who were mobile or not inclined to answer achievement questions.

ASSUMPTIONS, LIMITATIONS AND DELIMITATIONS

This section identifies the assumptions and specifies the limitations, as well as the delimitations, of the study. (**Minimum three to four paragraphs**)

- States the assumptions being accepted for the study (methodological, theoretical, and topic-specific).
- Provides rationale for each assumption, incorporating multiple perspectives, when appropriate.
- Identifies limitations of the research design.
- Identifies delimitations of the research design.
- An assumption is a self-evident truth.
- This section should list what is assumed to be true about the information gathered in the study. State the assumptions being accepted for the study as methodological, theoretical, or topic specific.
- For each assumption listed, you must also provide an explanation. Provide a rationale for each assumption, incorporating multiple perspectives, when appropriate.
- Limitations are things that the researcher has no control over, such as bias.
- Delimitations are things over which the researcher has control, such as location of the study. Identify the limitations and delimitations of the research design.
- Discuss the potential generalizability of the study findings based on these limitations.
- For each limitation and/or delimitation listed, make sure to provide an associated explanation.

3. 2. 6. Purpose of the Study

The purpose of the Study section of Chapter 1 provides a reflection of the problem statement and identifies how the study will be accomplished. It explains how the proposed study will contribute to the field. The section begins with a declarative statement, “The purpose of this study is.... .” Included in this statement are also the research design, population, variables (quantitative) or phenomena (qualitative) to be studied, and the geographic location. Further, the section clearly defines the dependent and independent variables, relationship of variables, or comparison of groups for quantitative studies. For qualitative studies, this section describes the nature of the phenomena to be explored. Keep in mind that the purpose of the study is restated in other chapters of the dissertation and should be worded exactly as presented in this section of Chapter 1. Refer to Creswell (2014) for sample purpose statement templates that are aligned with the different research methods (qualitative/quantitative).

PURPOSE OF THE STUDY

The purpose statement section expands on the problem statement and identifies how the study will be accomplished. It explains how the proposed study will contribute to the field. This section is summarized in Chapter 3. (Minimum two to three paragraphs)

- Presents a declarative statement: “The purpose of this study is....” that identifies the research methodology and design, population, variables (quantitative) or phenomena (qualitative) to be studied and geographic location.
- Identifies research methodology as qualitative, or quantitative, and identifies the specific research design.
- Describes the target population and geographic location for the study.
- **Quantitative:** Defines the variables, relationship of variables, or comparison of groups.
- **Qualitative:** Describes the nature of the phenomena to be explored.

3. 2. 7. Rational of the Study

The Rationale for the Study section of Chapter 1 clearly justifies the methodology the researcher plans to use for conducting the study. It argues how the methodological framework is the best approach to answer the research questions and address the problem statement. Finally, it contains citations from textbooks and articles on research methodology and/or articles on related studies.

For qualitative designs, this section states the research question(s) the study will answer and describes the phenomenon to be studied. For quantitative designs, this section describes the research questions the study will answer, identifies the variables, and states the hypotheses (predictive statements) using the format appropriate for the specific design. Finally, this section includes a discussion of the research questions, relating them to the problem statement. This section should illustrate how the

methodological framework is aligned with the problem statement and purpose of the study, providing additional context for the study.

RATIONALE FOR THE STUDY

This section clearly justifies the methodology the researcher plans to use for conducting the study. It argues why the methodological framework is the best approach to answer the research questions and how it will address the problem statement. It uses citations from textbooks and articles on research methodology and/or articles on related studies to justify the methodology. **(Minimum two to three paragraphs)**

- Identifies the specific research methodology for the study.
- Justifies the methodology to be used for the study by discussing why it is the best approach for answering the research question(s) and addressing the problem statement.
- Uses citations from seminal (authoritative) sources (textbooks and/or empirical research literature) to justify the selected methodology. **Note:** *Introductory or survey research textbooks (such as Creswell) are not considered seminal sources.*

3. 2. 8. Significance of the Research

This section identifies and describes the significance of the study. It also discusses the implications of the potential results based on the research questions and problem statement, hypotheses, or the investigated phenomena. Further, it describes how the research fits within and will contribute to the current literature or body of research. Finally, it describes the potential practical applications from the research. This section is of particular importance because it justifies the need for, and the relevance of, the research.

The Significance of the Study section justifies the need for the investigation. It answers the basic questions of WHY the investigation is important or valuable. One must make a compelling case for the study's contribution to the field. Grounds for the research might rest on such aspects as the emerging questions of prior studies, conflicting findings in other studies, evolution of methodologies, or political, social, or psychological trends. Most committees are looking for a one page significance of the study, as in Exhibit in the table below.

SIGNIFICANCE OF THE STUDY

This section identifies and describes the significance of the study and the implications of the potential results based on the research questions, the problem statement, and the hypotheses or the investigated phenomena. It describes how the research fits within and will contribute to the current literature or body of research. It describes potential practical applications from the research. **(Minimum three to four paragraphs)**

- This section identifies and describes the significance of the study and the implications of the

potential results based on the research questions, the problem statement, and the hypotheses or the investigated phenomena. It describes how the research fits within and will contribute to the current literature or body of research. It describes potential practical applications from the research. **(Minimum three to four paragraphs)**

- Describes how the study will make a practical contribution in the field of study.
- Describes how addressing the problem will add value to the population, community, or society.

Significance of the Study

Computer assisted instruction effectiveness has been investigated extensively over the past 10 years (Kulik & Kulik, 1985; Moursund, 1986; Pannwitt, 1984; Rota, 1981). However, results of reported effectiveness are conflicting. Some of these conflicting findings have been attributed to the size of the sample, the design of the study, the design of the instruction, and data analytic procedures.

Public opinion has been greatly affected by the reported successes of computers in education (NSBA Leadership Report, 1985). The recommendations of the report are influencing decision makers about how resources should be allocated.

The question that one must ask is how much of the increase of Computer Assisted Instruction use is based upon it being considered a fad, and how much is based upon Outcome research showing the relationship between Computer Assisted Instruction and achievement. What is needed is an examination of the effectiveness of Computer Assisted Instruction as it relates to achievement gains in a large enough sample of students at different ability levels and for different content areas. The High School and Beyond database allows for such an investigation.

3. 2. 9. The Nature of the Study

This section describes the specific research design to answer the research questions and why this approach was selected. Here, the researcher discusses why the selected design is the best design to address the problem statement and research questions as compared to other designs. This section also contains a description of the research sample being studied, as well as, the process that will be used to collect the data on the sample. In other words, this section provides a preview of Chapter 3 and succinctly conveys the research approach to answer the research questions and/or test the hypotheses.

NATURE OF THE STUDY

This section describes the specific research design to answer the research questions and affirms why this approach was selected. It describes the research sample being studied as well as the process that will be used to collect the data on the sample. It identifies the instruments or sources of data needed to answer the research questions. It provides citations from seminal sources such as research textbooks, research articles, and articles on similar studies. **(Minimum three to four paragraphs or**

approximately one page)

- Describes the selected design for the study.
- Discusses why the selected design is the best design to address the problem statement and research questions as compared to other designs.
- Briefly describes the target population, and the sampling method for the study, the data collection procedures to collect data on the sample, and the instruments or sources of data needed to answer the research questions.

3. 2. 10. Definitions and Operational Terms

The Definition of Terms section of Chapter 1 defines the study constructs and provides a common understanding of the technical terms, exclusive jargon, variables, phenomena, concepts, and technical terminology used within the scope of the study. Terms are defined in lay terms and in the context in which they are used within the study. Each definition may be a few sentences to a paragraph in length. This section includes any words that may be unknown to a lay person (words with unusual or ambiguous meanings or technical terms). Definitions must be supported with citations from scholarly sources. Do not use *Wikipedia* to define terms. This popular “open source” online encyclopedia can be helpful and interesting for the layperson, but it is not appropriate for formal academic research and writing.

Additionally, do not use dictionaries to define terms. A paragraph introducing this section prior to listing the definition of terms can be inserted. However, a lead-in phrase is needed to introduce the terms such as: “The following terms were used operationally in this study.” This is also a good place to “operationally define” unique phrases specific to this research. See below for the correct format: ***Term***, Write the definition of the word, make sure the definition is properly cited (Author, 2010, p.123).

The Definitions and Operational Terms section defines the most frequently used terms within the study. These words and phrases selected for definition should be chosen to be included because they will lead to a better understanding of the study. Definitions included in a research study are based on a scientific foundation: that is, distinctions are made between a constitutive definition and an operational definition. The former defines a term's meaning by using other words; the latter assigns meaning according to specific operations necessary to measure it (Kerlinger, 1986). It is especially important to operationally define terms that take on a different definition from more commonly accepted definitions that might be assumed by the reader.

It may seem difficult to decide just what should be included in the list of operational definitions. First, one could begin with the terms used in the general research hypotheses. For example, from a study guided by a general research hypothesis about gender and job satisfaction the researcher should define the term "job satisfaction" in an operational way, i.e., how it will be measured in the study. Secondly, the researcher should note terms that have more than one definition in the literature, or are written about

differently by different theorists. "Job satisfaction" in the above example has been written about by various authors. The researcher must provide the one definition applicable to the present study.

The definitions can be obtained from a dictionary or a professional reference source. It will often be the case that scholars you reference will have developed their own definition. Or, you can review the various definitions that have surfaced in the literature review, and synthesize your own definition, showing why it is more appropriate than the other definitions. Because the manuscript is targeted to an academic audience, it is unnecessary to exhaustively define every term that a lay audience would not understand. One should keep the academic audience in mind and review the list with one's advisor to decide appropriate terms to include in this section.

- All of the variables in each research hypothesis, purpose, or question should be defined. Also, define any attribute of your population. Theories and models should also be defined.
- If an unpublished instrument was used, the whole instrument should be reproduced in an appendix to operationally define the variable.
- Operational definitions should be sufficiently specific so that another investigator can replicate the study.

Definitions and Operational Terms

- **Ability score:** ability was operationally defined by the Standardized Vocabulary Test from the HSB study.
- **Ethnicity:** the self-identification of being Black, Hispanic, White (not Hispanic), or Other.
- **Grades:** letter grades that are self-reported by students.
- **Socioeconomic status:** a composite score based upon factors of family income, and operationally defined as the SES score on the HSB database.

DEFINITIONS OF TERMS

This section defines the study constructs and provides a common understanding of the technical terms, exclusive jargon, variables, phenomena, concepts, and sundry terminology used within the scope of the study. Terms are defined in lay language and in the context in which they are used within the study.

(Each definition may be a few sentences to a paragraph.)

- Defines any words that may be unknown to a lay person (words with unusual or ambiguous meanings or technical terms) from the research or literature.
- Defines the variables for a quantitative study or the phenomena for a qualitative study from the research or literature.
- Definitions are supported with citations from scholarly sources.

3. 2. 11. Organizations of the Dissertation

This section summarizes the key points of Chapter 1 and provides supporting citations for those key points. It then provides a transition discussion to Chapter 2 followed by a description of the remaining chapters. For example, Chapter 2 will present a review of current research on the centrality of the dissertation literature review in research preparation. Chapter 3 will describe the methodology, research design, and procedures for this investigation. Chapter 4 details how the data was analyzed and provides both a written and graphic summary of the results. Chapter 5 is an interpretation and discussion of the results, as it relates to the existing body of research related to the dissertation topic. For the proposal, this section should also provide a timeline for completing the research and writing up the dissertation. When the dissertation is complete, this section should be revised to eliminate the timeline information

You should write your dissertation with the idea in mind that the intended reader and reviewer has some shared understanding of the area being investigated, however, underpinning concepts and arguments still need to be included as otherwise the depth of research will be compromised. In this way, you will not be tempted to make too many implicit assumptions, i.e. by making the erroneous assumptions that the reader has your degree of knowledge about the matters in question or can follow, exactly, your thought processes without your spelling them out. It should be a document which is ‘self-contained’ and does not need any additional explanation, or interpretation, or reference to other documents in order that it may be fully understood.

The Summary section should briefly summarize all the major areas of focus covered by the first chapter. It synthesizes the chapter without repeating verbatim what is in the chapter. The summary helps a reader, who is unfamiliar with the content area, to superficially examine the material in the chapter. The Summary section is considered optional by some committees; however, to be consistent, if a summary is used in the first chapter, then a summary should appear at the end of each chapter. This short final section of the Introduction should tell the reader what topics are going to be discussed in each of the chapters and how the chapters are related to each other. In this way, you are, in effect, providing the reader with a ‘road map’ of the work ahead. Thus, at a glance, they can see

- (1) where they are starting from,
- (2) the context in which the journey is taking place,
- (3) Where they are going to end up, and
- (4) The route which they will take to reach their final destination. Such a ‘map’ will enable the reader to navigate their way through your work much more easily and appreciate to the maximum what you have done.

CHAPTER 1 SUMMARY AND ORGANIZATION OF THE REMAINDER OF THE STUDY

- This section summarizes the key points of Chapter 1 and provides supporting citations for those key points.
 - It then provides a transition discussion to Chapter 2 followed by a description of the remaining chapters.
 - The Proposal, but not the Dissertation, provides a timeline for completing the research and dissertation. (**Minimum one to two pages**)
- | |
|---|
| <ul style="list-style-type: none">• Summarizes key points presented in Chapter 1. |
| <ul style="list-style-type: none">• Provides citations from scholarly sources to support key points. |
| <ul style="list-style-type: none">• Describes the remaining Chapters and provides a transition discussion to Chapter 2. For proposal only, a timeline for completing the research and dissertation is provided. |
| <ul style="list-style-type: none">• The Chapter is correctly formatted to dissertation template using the <i>Word Style Tool</i> and APA standards. Writing is free of mechanical errors. |
| <ul style="list-style-type: none">• All research presented in the Chapter is scholarly, topic-related, and obtained from highly respected academic, professional, original sources. In-text citations are accurate, correctly cited, and included in the reference page according to APA standards. |
| <ul style="list-style-type: none">• Section is written in a way that is well structured, has a logical flow, uses correct paragraph structure, uses correct sentence structure, uses correct punctuation, and uses correct APA format. |

3. 3. Literature Review

3. 3. 1. Introduction to the Literature Review

This chapter presents the theoretical framework for the study and develops the topic, specific research problem, question(s), and design elements. In order to perform significant dissertation research, the learner must first understand the literature related to the research focus. A well-articulated, thorough literature review provides the foundation for a substantial, contributory dissertation. The purpose of Chapter 2 is to develop a well -documented argument for the selection of the research topic, to formulate the research questions, and to justify the choice of research methodology. A literature review is a **synthesis** of what has been published on a topic by accredited scholars and researchers. It is not an expanded annotated bibliography or a summary of research articles related to your topic.

The literature review will place the research focus into context by analyzing and discussing the existing body of knowledge and effectively telling the reader everything that is known, or everything that has been discovered in research about that focus, and where the gaps and tensions in the research exist. As a piece of writing, the literature review must convey to the reader what knowledge and ideas have been established on a topic, and build an argument in support of the research problem.

This section describes the overall topic to be investigated, outlines the approach taken for the literature review, and the evolution of the problem based on the “gap” or “need” defined in the literature from its origination to its current form. Make sure the Introduction and Background section of your literature review addresses all required criterion listed in the table below.

CHAPTER 2 INTRODUCTION (TO THE CHAPTER) AND BACKGROUND (TO THE PROBLEM)
This section describes the overall topic to be investigated, outlines the approach taken for the literature review, and argues the evolution of the problem based on the "gap" or "need" defined in the literature from its origination to its current form. (Minimum two to three pages
<ul style="list-style-type: none"> • Introduction: Provides an orienting paragraph so the reader knows what the literature review will address.
<ul style="list-style-type: none"> • Introduction: Describes how the chapter will be organized (including the specific sections and subsections).
<ul style="list-style-type: none"> • Introduction: Describes how the literature was surveyed so the reader can evaluate thoroughness of the review. This includes search terms and databases used
<ul style="list-style-type: none"> • Background: Discusses how the problem has evolved historically into its current form
<ul style="list-style-type: none"> • Background: Describes the “gap” or “need” defined in the current literature and how it leads to the creation of the topic and problem statement for the study.

3. 3. 2. Theoretical framework or conceptual framework

This **section identifies the theory (ies) or model(s)** that provide the foundation for the research study. It also contains an explanation of how the problem under investigation relates to the theory or model. The seminal source for each theory or model presented in this section should be identified and described.

For a quantitative study, the theory (ies) or models(s) guides the research question(s) and justifies what is being measured (variables), and describes how those variables are related. In a qualitative study the theory or model justifies the phenomena being investigated (qualitative). This section also includes a discussion of how the research question(s) align with the respective theory (ies) or model(s) and illustrates how the study fits within the prior research based on the theory (ies) or model(s). The learner should cite references reflective of the foundational, historical, and current literature in the field. Overall, the presentation in this section should reflect that the learner understands the theory or model and its relevance to the proposed study. The discussion should also reflect knowledge and familiarity with the historical development of the theory.

THEORETICAL FRAMEWORK AND/OR CONCEPTUAL FRAMEWORK

This section identifies the theory (ies) or model(s) that provide the foundation for the research. This section should present the theory(ies) or models(s) and explain how the problem under investigation relates to the

Theory (ies) or model(s). The theory (ies) or models(s) guide the research questions and justify what is being measured (variables) as well as how those variables are related (quantitative) or the phenomena being investigated (qualitative). **(Minimum two to three pages)**

- Identifies a model(s) or theory (ies) from seminal source(s) that provide a reasonable conceptual framework or theoretical foundation to use in developing the research questions, identifying variables/phenomena, and selecting data collection instruments.
- Accurately cites the appropriate seminal source(s) for each theory or model.
- Includes a cogent discussion/synthesis of the theory or model and justifies the theoretical foundation/framework as relevant to the study. Connects the study directly to the theory and describes how the study will add or extend the theory or model.
- Builds a logical argument of how the research questions directly align to the theoretical foundation for the study.
- Reflects a deep understanding of the foundational, historical, research relevant to the theoretical foundation/framework.

3.3.4. Review of the Literature

This section provides a broad, balanced overview of the existing literature related to the proposed research topic. The Review of Literature identifies themes, trends, and conflicts in research methodology, design and findings. It provides a synthesis of the existing literature, examines the contributions of the literature related to the topic, and presents an evaluation of the overall methodological strengths and weaknesses of the research. Through this synthesis, the gaps in research should become evident to the reader.

Citations are provided for all ideas, concepts, and perspectives. The researcher's personal opinions or perspectives are not included. Chapter 2 must be a minimum of 30 pages in length. However, it is important to note that a well-written comprehensive literature review will likely exceed this minimum requirement. The literature review must be continuously updated throughout the dissertation research and writing process. Chapter 2 needs to include a minimum of 50 peer-reviewed, empirical research articles, and 75% of all references within this chapter (and in proposal/dissertation) must be within the past five years. Seventy five percent (75%) of your sources must be dated within five years of the proposal defense date or dissertation defense date, and updated as appropriate at the time of the dissertation defense. Other requirements for the literature review include:

- Quantitative study: Describes each research variable in the study discussing the prior empirical research that has been done on the variable(s) and the relationship between variables.
- Qualitative study: Describes the phenomena being explored in the study discussing the prior research that has been done on the phenomena.
- Discusses the various methodologies and designs that have been used to research topics related to the study. Use this information to justify the proposed design.
- Argues the appropriateness of the dissertation's instruments, measures, and/or approaches used to collect data.
- Discusses and synthesizes studies related to the proposed dissertation topic. This may include
 1. (1) studies describing and/or relating the variables (quantitative) or exploring related phenomena (qualitative),
 2. (2) studies on related research such as factors associated with the themes,
 3. (3) Studies on the instruments used to collect data,
 4. (4) studies on the broad population for the study, and/or
 5. (5) Studies similar to the proposed study. The themes presented and research studies discussed and synthesized in the Review of Literature demonstrates a deep understanding of all aspects of the research topic. The set of topics discussed in the Review of Literature must demonstrate a comprehensive understanding of the broad area in which the research topic exists.
- Discusses and synthesizes the various methodologies and designs that have been used in prior empirical research related to the study. Must use authoritative sources information to justify the proposed design. Provides discussion and justification for the instrumentation selected for the study. This section must argue the appropriateness of the dissertation's instruments, measures, and/or approaches used to collect data. Empirical research must be used to justify the selection of instrument(s).
- Each major section in the Review of Literature includes an introductory paragraph that explains why the particular topic was explored relative to the dissertation topic.
- Each major section in the Literature Review includes a summary paragraph(s) that
 1. (1) compares and contrasts alternative perspectives on the topic,
 2. (2) provides a synthesis of the themes relative to the research topic discussed that emerged from the literature,
 3. (3) discusses data from the various studies, and
 4. (4) Identifies how themes are relevant to the proposed dissertation topic.
- The types of references that may be used in the literature review include empirical articles, a limited number of dissertations (no more than 5) , peer-reviewed or scholarly journal articles, and

books (no more than 5-10) that present cutting edge views on a topic, are research based, or are seminal works.

- Provides additional arguments for the need for the study that was defined in the Background to the Problem section.

The body of a literature review can be organized in a variety of ways depending on the nature of the research. Work with your chair and committee to determine the best way to organize this section of Chapter 2 as it pertains to your research design. Make sure you include a section for methodology and instrumentation (see the rubrics, below).

Chapter 2 can be particularly challenging with regard to APA format for citations and quotations. Refer to your APA manual frequently to make sure your citations are formatted properly. It is critical that each in-text citation is appropriately listed in the Reference section. Incorrectly citing and referencing sources is a serious scholarly and ethical violation, particularly at the doctoral level when writing the dissertation. As an emerging scholar you must demonstrate the capability and responsibility to properly cite and reference every single source that you reference in your literature review and in throughout your dissertation!

As a rule, if a direct quote comprises fewer than 40 words, incorporate it into the narrative and enclose it with double quotation marks. The in-text citation is included after the final punctuation mark [6.03]. The final punctuation mark in quoted text should be placed inside the quotation mark. For a quote within a quote, use a set of single quotation marks. Here is an example of a direct quote within a quote integrated into the narrative. In the classic introspective autobiography, *The Memoirs of a Superfluous Man*, we read that, “one never knows when or where the spirit’s breathe will rest, or what will come of its touch. ‘The spirit breathes where it will,’ said the *Santissimo, Salvatore*, ‘and thou hearest the sound thereof, but cannot tell whence it cometh or whither it goeth.’” (Nock, 1943, p.187) [4.08].

As a rule, if a quote comprises 40 or more words, display this material as a freestanding block quote. Start formal block quotes on a new line. They are indented one inch in from the left margin. The entire block quote is double-spaced. Quotation marks are *not* used with formal block quotes. The in-text citation is included after the final punctuation mark. [6.03]. Below is an example of a block quote: In an important biography, *The First American: the Life and Times of Benjamin Franklin*, historian H. W.

REVIEW OF THE LITERATURE

This section provides a broad, balanced overview and synthesis of the existing literature related to the proposed research topic. It identifies topics, themes, trends, and conflicts in research methodology, design, and findings. It describes the literature in related topic areas and its relevance to the research topic and research approach. It provides an overall analysis and synthesis of the existing literature examining the contributions of this literature to the field; identifying the conflicts; and relating the topics, themes, and results to the study topic and research approach. Accurate, empirical research

citations are provided for all ideas, concepts, and perspectives. The researcher's personal opinions or perspectives are not included. (**Minimum 30 pages**)

- This section must be a minimum of 30 pages.
- The purpose of the minimum number of pages is to ensure that the overall literature review reflects a foundational understanding of the theory or theories, literature and research studies related to the topic.
- A well-written comprehensive literature review that reflects the current state of research and literature on the topic is expected and will likely exceed 30 pages.
- Literature review should be updated continuously.
- This is an ongoing process to dissertation completion.

- **Quantitative Studies:** Describes each research variable in the study discussing the prior empirical research that has been done on the variables and the relationship between the variables.
- **Qualitative Studies:** Describes the phenomena being explored in the study discussing the prior research that has been done on the phenomena

- **Themes or Topics (Required):** Discusses and synthesizes studies related to the proposed dissertation topic. May include
 - ✓ studies describing and/or relating the variables (quantitative) or exploring related phenomena (qualitative),
 - ✓ (2) studies on related research such as factors associated with the themes,
 - ✓ (3) studies on the instruments used to collect data, (4) studies on the broad population for the study, and/or
 - ✓ (5) Studies similar to the proposed study. The themes presented and research studies discussed and synthesized in the Review of Literature demonstrates a deep understanding of all aspects of the research topic.

- **Methodology Section (required):** Discusses and synthesizes the various methodologies and designs that have been used in prior empirical research related to the study. Must use authoritative sources to justify the proposed design.

- **Instrumentation Section (required):** Provides discussion and justification for the instrumentation selected for the study. This section must argue the appropriateness of the dissertation's instruments, measures, and/or approaches used to collect data.

- Empirical research must be used to justify the selection of instrument(s).

- Structures literature review in a logical order, includes actual data and accurate synthesis of results from reviewed studies as related to the learners own topic, not just a summary of the

findings.
<ul style="list-style-type: none"> • Includes in each major section (theme or topic) within the Review of Literature an introductory paragraph that explains why the particular theme or topic was explored relative to the overall dissertation topic.
<ul style="list-style-type: none"> • Includes in each section within the Review of Literature a summary paragraph(s) that • compares and contrasts alternative perspectives on the topic and • (2) provides a synthesis of the themes relative to the research topic discussed that emerged from the literature, and • (3) Identifies how themes are relevant to the proposed dissertation topic.
<ul style="list-style-type: none"> • Provides additional arguments for the need for the study that was defined in the Background to the Problem section.
<ul style="list-style-type: none"> • Ensures that for every in-text citation a reference entry exists. Conversely, for every reference list entry there is a corresponding in-text citation. Note: The accuracy of citations and quality of sources must be verified by learner, chair and committee members.
<ul style="list-style-type: none"> • Uses a range of references including founding theorists, peer-reviewed empirical research studies from scholarly journals, and government/foundation research reports. Note: A minimum of 50 peer-reviewed, empirical research articles are required for the literature review.
<ul style="list-style-type: none"> • Verifies that 75% of all references are scholarly sources within the past 5 years. The 5 year time frame is referenced at the time of the proposal defense date and at the time of the dissertation defense date. Note: Websites, dictionaries, publications without dates (n.d.), are not considered scholarly sources and should not be cited or present in reference list.
<ul style="list-style-type: none"> • Avoids overuse of books and dissertations. Books: Maximum of 10 scholarly books that present cutting edge views on a topic, are research based, or are seminal works. Dissertations: Maximum of 5 published dissertations.

3. 3. Summary

This section succinctly restates what was written in the literature review Chapter and provides supporting citations for key points. The summary section reflects that the learner has done his/her "due diligence" to become well-read on the topic and can conduct a study that will add to the existing body of research and knowledge on the topic. It synthesizes the information from the chapter to define the "gaps" in or "identified research needs" arising from the literature, the theory (ies) or model(s) to provide the foundation for the study, the problem statement, the primary research question, the methodology, the design, the variables or phenomena, the data collection instruments or sources, and the population to be studied. Overall, this section should help the reader clearly see and understand the relevance and

importance of the research to be conducted. The criteria listed in the table below are required for this section. The Summary section transitions to Chapter 3 by building a case for the study, in terms of research design and rigor, and it formulates the research questions based on the gaps and tensions in the literature.

CHAPTER 2 SUMMARY

This section restates what was written in Chapter 2 and provides supporting citations for key points. The summary section reflects that the learner has done his/her "due diligence" to become well-read on the topic and can conduct a study that will add to the existing body of research and knowledge on the topic. It synthesizes the information from the chapter to define the "gaps" in or "identified research needs" arising from the literature, the theory(ies) or model(s) to provide the foundation for the study, the problem statement, the primary research question, the methodology, the design, the variables or phenomena, the data collection instruments or sources, and the population to be studied. It then provides a transition discussion to the subsequent Chapter 3.

- Synthesizes the information from all of the prior sections in the Literature Review using it to define the key strategic points for the research.
- Summarizes the gaps and needs in the background and introduction describing how it informs the problem statement.
- Identifies the theory (ies) or model(s) describing how they inform the research questions.
- Justifies the design, variables or phenomena, data collection instruments or sources, and population to be studied.
- Builds a case (argument) for the study in terms of the value of the research and how the research questions emerged from the review of literature
- Reflects that the Learner has done his or her “due diligence” to synthesize the existing empirical research and write a comprehensive literature review on the research topic
- Summarizes key points in Chapter 2 and transitions into Chapter 3.
- The Chapter is correctly formatted to dissertation template using *the Word Style Tool* and APA standards. Writing is free of mechanical errors.
- All research presented in the Chapter is scholarly topic-related, and obtained from highly respected, academic, professional, original sources. In-text citations are accurate, correctly cited and included in the reference page according to APA standards.
- Section is written in a way that is well structured, has a logical flow, uses correct paragraph structure, uses correct sentence structure, uses correct punctuation, and uses correct APA format.

3. 4. Research Methodology

3. 4. 1. Introduction

Chapter 3 documents how the study is conducted in enough detail so that replication by others is possible. The introduction begins with a summary of the research focus and purpose statement to reintroduce the reader to the study. This can be summarized in three to four sentences from Chapter 1. This section also outlines the expectations for this chapter. This section is essential to most good research proposals. How you study a problem is often as important as the results you collect. This section includes a description of the general means through which the goals of the study will be achieved: methods, materials, procedures, tasks, etc. An effective research methodology section should:

CHAPTER 3 INTRODUCTION

This section includes both a restatement of the research focus and the Purpose Statement for the study from Chapter 1 to reintroduce reader to the need for the study and a description of contents of the chapter.

- The Introduction summarizes the research focus, and the purpose statement to reintroduce the reader to the study. This section also outlines the expectations for this chapter.
- Section is written in a way that is well structured, has a logical flow, uses correct paragraph structure, uses correct sentence structure, uses correct punctuation, and uses correct APA format.
- The research problem is restated for the convenience of the reader. This section aligns to the related section in Chapter 1.

3. 4. 2. Research Questions or Hypothesis

This section restates the research question(s) and the hypotheses for the study from Chapter 1. For a quantitative study, it then presents the matching hypotheses and explains the variables. For a qualitative study, it then describes the phenomena to be understood as a result of the study. The section also briefly discusses the approaches to collecting the data to answer the research questions. For a quantitative study, it describes the instrument(s) or data source(s) to collect the data for each and every variable. For a qualitative study, it describes the instrument(s) or data source(s) to collect the data to answer each research question. It also discusses why the design was selected to be the best approach to answer the research questions, test the hypotheses (quantitative), or understand the phenomena (qualitative).

RESEARCH QUESTIONS AND/OR HYPOTHESES

This section restates the research question(s) and the hypotheses or phenomena and explains why the selected design is the best approach to answer the research questions. Further, it defines the variables and/or groups. The section also discusses the approaches to collecting the data to answer the research questions. This section expands on the related section in Chapter 1.

- **For a qualitative study**, restates the research questions and the phenomena for the study from Chapter 1.
- **For a quantitative study**, restates the research questions from Chapter 1, presents the matching hypotheses and operationalizes the variables. Research questions must align directly with the problem and purpose statements,
- Describes the nature and sources of necessary data to answer the research questions (primary versus secondary data, specific people, institutional archives, Internet open sources, etc.).
- **For a quantitative study**, the section describes the instrument(s) or data source(s) to collect the data for each and every variable.
- **For a qualitative study**, the section describes the instrument(s) or data source(s) to collect the data to answer each research question.

3. 4. 3. Research Approach

Introduce the overall methodological approach for each problem or question. Is your study qualitative or quantitative? Are you going to take a special approach, such as action research, or use case studies?

Indicate how the approach fits the overall research design. Your methods should have a clear connection with your research questions and/or hypotheses. In other words, make sure that your methods will actually answer your questions—Don Thackrey notes that the most common reason for the rejection of professional proposals is that “the proposed tests, or methods, or scientific procedures are unsuited to the stated objective.”

This section describes the research methodology for the study (quantitative, qualitative, or mixed) and explains the rationale for selecting this particular methodology. It also describes why this methodology was selected as opposed to the alternative methodologies. This section should elaborate on the Methodology section (from Chapter 1) providing the rationale for the selected research method (quantitative, qualitative, or mixed). Arguments are supported by citations from articles and books on research methodology and/or design. It is also appropriate in this section to outline the predicted results in relation to the research questions and hypotheses based on the existing literature.

RESEARCH METHODOLOGY

This section describes the research methodology for the study (quantitative, qualitative, or mixed) and explains the rationale for selecting this particular methodology as opposed to the alternative methodologies. (**Minimum one to two pages**)

- Elaborates on the research methodology (from Chapter 1) for the study (quantitative, qualitative, or mixed). Provides the rationale for selecting the particular methodology supported by empirical studies in the research literature. Justifies why the methodology was selected as opposed to alternative methodologies.

- Uses authoritative source(s) to justify the selected methodology. *Note: Do not use introductory research textbooks (such as Creswell) to justify the research design and data analysis approach.*

3. 4. 3. 1. Research Method

The methods section should describe in detail how the study was performed. Ideally, after reading your methods section another researcher could duplicate your study. Remember when writing the methods section, it should be clear how your methods will answer the research question and refute or support your hypothesis.

Structured methods sections such as with subheadings such as “subjects,” “treatment protocol,” and “statistical methods”) are popular while some prestigious journals, which have limited print space, provide an expanded, online methods section. The number of subheadings in the methods section depends on the type of paper. A study that involves human subjects should include the subheading/section “subjects.” An equipment evaluation should include a subheading/ section entitled “equipment.” The most common methods subheadings are discussed below.

3. 4. 4. Research Design

This section elaborates on the nature of the Research Design for the Study section from Chapter 1. It includes a detailed description of, and a rationale for, the specific design for the study. It also discusses the specific research design for the study (descriptive, correlational, experimental, quasi-experimental, historical, case study, ethnography, phenomenology, content analysis, exploratory, explanatory, embedded, triangulation, etc.) and describes how it aligns to the selected methodology indicated in the previous section. Additionally, it describes why the selected design is the best option to collect the data to answer the research needed for the study. It explains exactly how the selected design will be used to collect data for each and every variable (for a quantitative study), or how the selected design will be used to collect data to describe the nature of the phenomena in detail (for a qualitative study). It identifies the specific instruments and data sources to be used to collect all of the different data required for the study.

Arguments are supported by citations from articles and books on research methodology and/or design. This section should specify the independent, dependent, and/or classificatory variables as appropriate. Be sure to relate the variables back to the research questions and/or hypotheses. A brief discussion of the type of data collection tool chosen (survey, interview, observation, etc.) can also be included in this section as related to the variables.

RESEARCH DESIGN

This section describes in detail the specific design for the study and describes why it is the best design to collect the data to answer the research needed for the study. It explains exactly how the selected design was used to facilitate collection of data for each and every variable (for a quantitative study) or how the selected design was used to facilitate collection of data to describe the nature of the phenomena in detail (for a qualitative study). It identifies the specific instruments and data sources to be used to collect all of the different data required for the study. This section expands on the Nature of the Research Design for the Study section in Chapter 1. **(Minimum one to two pages)**

- Elaborates on the research design from Chapter 1.
- Provides the rationale for selecting the particular research design supported by empirical references.
- Justifies why the design was selected as the best approach to collect the needed data, as opposed to alternative designs.
- Describes how the specific, selected research design will be used to collect the type of data needed to answer the research questions and the specific instruments or data sources that will be used to collect this data. For quantitative studies provide the variable structure and state the unit of analysis.
- Uses authoritative source(s) to justify the design.
- *Note: Do not use introductory research textbooks (such as Creswell) to justify the research design and data analysis approach.*

3. 4. 5. Population, Samples and Sample Selection Procedures

This section discusses the setting, general population, target population, and study sample. The discussion of the sample includes the research terminology specific to the type of sampling for the study. This section should include the components listed in the following table.

POPULATION AND SAMPLE SELECTION

This section discusses the setting, general population, target population, and study sample. The discussion of the sample includes the research terminology specific to the type of sampling for the study as well as how the sample population and final sample will be protected. This section provides a detailed description of the population and sample which were identified in the Research Design for the Study section in Chapter 1 as well as research considerations relevant to the sample and population. **(Minimum one to two pages)**

- Describes the general population (i.e., students with disabilities), target population (i.e. students with disabilities in one specific district – geographic location) and the study sample (students with disabilities in the district that participated in the study - actual study sample).

- Describes the study sample size. Provides evidence (based on the empirical research) literature that sample size is adequate for the research design.

- **Quantitative Sample Size Requirements:** Absolute Minimum: 50 cases or participants or 40 cases per cell. Applicable to studies that use frequencies/descriptive statistics and parametric statistical tests (t-tests, ANOVA, correlation, regression analysis)—additional requirements relate to the use of certain statistical analysis procedures may increase that number. General rule of thumb on survey research = 10 subjects per survey question. **An a-priori and/or post hoc Power Analysis is required to justify the study sample size based on the anticipated effect size and selected design.**

- **Qualitative Sample Size Requirements:**

- ✓ **Case Study:** Minimum 10 participants or cases; Recommended Target=20 due to attrition; minimum of 3 sources of data; must demonstrate triangulation of the data. Case study interviews may include closed ended questions with a dominance of open-ended questions; should be no less than 30 minutes; at least 15 pages of transcribed data, single spaced, 12 pt. Times New Roman.
- ✓ **Phenomenology:** 10-15 interviews; no closed ended questionnaires allowed; Interviews should be 60-90 minutes. There should be a minimum of 60 pages of transcribed data, single spaced, 12 pt. Times New Roman.
- ✓ **Descriptive:** 12-15 interviews or cases with at least 3 sources of data; 30-60 pages of transcribed data, single spaced, 12 pt. Times New Roman.
- ✓ **Narrative or Grounded Theory:** Minimum of 30 pages of transcribed data from interviews, open-ended questionnaire, or other data sources. Transcript to be 12 Point and single spaced. Studies typically have a minimum of 10-20 interviews or 40-60 open-ended questionnaires. Interviews are 60-90 minutes in length. Grounded theory studies must yield a theory or model.

- Defines and describes the sampling procedures (such as convenience, purposive, snowball, random, etc.) supported by scholarly research sources. Includes discussion of sample selection, and assignment to groups (if applicable), and strategies to account for participant attrition.

- Describes the site authorization process, confidentiality measures, study participation requirements, and geographic specifics.

3. 4. 5. 1. The Subject

Describe the study subjects such as normal volunteers, patients, or animals. If you have a control group, describe those subjects as well. Describe how the subjects were recruited and selected. Describe the inclusion and exclusion criteria. In a small study it may be helpful to include a table that lists the relevant characteristics such as age, sex, treatment group, diagnosis of each patient. In larger trials, the paper should include a table that summarizes the demographic data of the study groups.

If your study involved human subjects, you must include a statement that you obtained approval from your institutional review board, and you should describe, in a general way, how you obtained informed consent from the study subjects. Indicate who signed the consent form: the subjects or their legal representatives (which is common in critical care). As an example, “The protocol was approved by the University of Setif 2 Board, and informed consent was obtained from the subjects’ next of kin.” If the institutional review board waived the requirement to obtain consent, state why it was waived. Institutional review board approval is absolutely required to conduct studies with human subjects, so if your research did not have approval, your paper will be returned without review.

3. 4. 6. Data collection Procedures or Management

This section details the entirety of the process used to collect the data. Describe the step-by-step procedures used to carry out all the major steps for data collection for the study in a way that would allow another researcher to replicate the study. Think of this section of Chapter 3 as a recipe, that you need to carefully follow in order to produce the best possible study results (or “entrée”). If you were to insert a table in this section, for any reason, set it up as shown below. Refer to Table below for formatting instructions.

DATA COLLECTION PROCEDURES OR AND MANAGEMENT
This section details the entirety of the process used to collect the data. It describes each step of the data collection process in such a way that another researcher could replicate the study
Quantitative Studies: Describes the procedures for the actual data collection that would allow replication of the study by another researcher, including how each instrument or data source was used, how and where data were collected, and recorded. Includes a linear sequence of actions or step-by-step of procedures used to carry out all the major steps for data collection. Includes a workflow and corresponding timeline, presenting a logical, sequential, and transparent protocol for data collection that would allow another researcher to replicate the study.
Qualitative Studies: Provides detailed description of data collection process that would allow replication of the study by another researcher, including all sources of data and methods used, such as interviews, member checking, observations, surveys, and expert panel review. Note: The collected data must be sufficient in breadth and depth to answer the research question(s) and interpreted and presented correctly, by theme, research question and/or instrument.

Describes the procedures for obtaining informed consent and for protecting the rights and well-being of the study sample participants.

Describes (for both paper-based and electronic data) the data management procedures adopted to maintain data securely, including the length of time data will be kept, where it will be kept, and how it will be destroyed.

3. 4. 6. 1. Instrumentation or Sources of the Data

This section fully identifies and describes the types of data that will be collected, as well as the specific instruments and sources used to collect those data (tests, questionnaires, interviews, data bases, media, etc.). Discuss the specific instrument or source to collect data for each variable or group for a quantitative study. Discuss the specific instrument or source to collect information to describe the phenomena being studied for a qualitative study. Use the “Instrumentation” heading if you are conducting quantitative research. Use the “Sources of Data” heading if you are conducting qualitative research. Use appropriate APA level subheadings for each data collection instrument and place a copy of all instruments in an appendix.

If you are using an existing instrument, make sure to discuss in detail the characteristics of the instrument. For example, on a pre-existing survey tool describe: how the instrument was developed and constructed, the validity and reliability of the instrument, the number of items or questions included in the survey, the calculation of the scores, and the scale of measurement of data obtained from the instrument. You must also obtain all appropriate use permissions from instrument authors. If you are developing your own instrument, describe in detail the process used to develop the instrument, how the validity and reliability of the instrument was established, and the characteristics of the instrument as described above. You must describe the Pilot Test or Field Test that you performed to ensure that there is no bias in your questions or instrument.

INSTRUMENTATION OR SOURCES OF DATA

This section identifies and describes the types of data that were collected as well as the specific instruments and sources used to collect those data. For quantitative studies it also describes the specific type of scale of measurement used in an instrument or used to define the different groups

- Data Collection Instruments: Provides a detailed discussion of the instrumentation and data collection, which includes validity and reliability of the data. **Includes** citations from original publications by instrument developers (and subsequent users as appropriate).
- Data Collection Instruments: Describes the structure of each data collection instrument and data sources (tests, questionnaires, interviews, observations data bases, media, etc.). Specifies the type and level of data collected with each instrument.

3. 4. 7. Data Analysis Procedures

This section provides a step-by-step description of the procedures to be used to conduct the data analysis. The key elements of this section include the process by which you prepared raw data for analysis and then subsequently analyzed that data. Overall, be sure that the language used to describe the data analysis procedure is consistently used in the subsequent Chapters. Furthermore, explain how you intend to analyze and interpret your results. Will you use statistical analysis? Will you use specific theoretical perspectives to help you analyze a text or explain observed behaviors?

- If necessary, provide background and rationale for methodologies that are unfamiliar for your readers. (Typically, the social sciences and humanities require more explanation/rationale of methods than the hard sciences).
- If applicable, you may also need to provide a rationale for subject selection (particularly if you have not already provided one). For instance, if you propose to conduct interviews and use questionnaires, how do you intend to select the sample population? If you are analyzing literary texts, which texts have you chosen, and why?

DATA ANALYSIS PROCEDURES

This section describes how the data were collected for each variable or group (quantitative study) or for each research question (qualitative study). It describes the type of data analyzed, identifying the descriptive, thematic, inferential, and/or non-statistical analyses. This section demonstrates that the research analysis is aligned to the specific research design.

- Lists the research question(s). Also includes the null and alternative hypotheses for quantitative studies.
- Describes in detail the relevant data collected for each stated research question and/or each variable within each hypothesis (if applicable).
- Describes in detail the data management practice including how the raw data was organized and prepared for analysis, i.e., ID matching of respondents who may respond to more than one survey/instrument, coding/recoding of variables, treatment of missing values, scoring, calculations, etc.
- **What:** Describes, in detail, statistical and non-statistical analysis to be used and procedures used to conduct the data analysis.
- **Why:** Provides the justification for each of the (statistical and non-statistical) data analysis procedures used in the study.
- **How:** Demonstrates how the statistical and non-statistical data analysis techniques align with the research questions/design.

- **Qualitative Analysis** - evidence of qualitative analysis approach, such as coding and theming process, must be completely described and include the analysis /interpretation process.
- Provides evidence that quantity and quality of data is sufficient to answer the research questions. This must be present in this section or in an appendix including data samples.

3. 4. 8. Issues of Validity

This section describes and defends the procedures used to determine the validity of the data collected. Validity refers to the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure. Ask if what is actually being measured is what was set out to be measured. As a researcher, you must be concerned with both external and internal validity. External validity refers to the extent to which the results of the study are generalizable (quantitative) or transferable (qualitative) to the population. Internal validity refers to the rigor with which the study was conducted (study design, theory instrumentation, measurements, etc.). For this section, provide specific validity statistics for quantitative instruments, identifying how they were developed. Explain specific approaches on how validity will be addressed for qualitative data collection approaches.

VALIDITY

This section describes and defends the procedures used to determine the validity of the data collected appropriate to the methodology conducted.

- **Quantitative Studies:** Provides specific validity statistics for quantitative instruments, identifying how they were developed. Validated surveys cannot be used in part or adapted. Validated instruments borrowed by the learner must be included in the proposal/dissertation appendices along with the researcher's word file of his/her version of the instrument (whose content should be identical with that of the original). **NOTE:** *Learners should not modify or develop quantitative instruments without permission from the Director of Dissertations.*
- **Qualitative Studies:** Establishes validity to ensure the data that is collected is true and certain. Processes include collection of multiple sources of data; triangulation; member checking; quasi-statistics; review of data analysis by others; expert panel review of developed instruments; and/or practicing interviews and observations.
- Appendices must include copies of instruments, qualitative data collection protocols, codebooks, and permission letters from instrument authors (for validated instruments, surveys, interview guides, etc.)

3. 4. 9. Issues of Reliability

This section describes and defends the procedures used to determine the reliability of the data collected. Reliability is the extent to which an experiment, test, or any measuring procedure is replicable and yields the same result with repeated trials. For this section, provide specific reliability statistics for quantitative instruments, identifying how the statistics were developed. Explain specific approaches on how reliability will be addressed for qualitative data collection approaches.

RELIABILITY

This section describes and defends the procedures used to determine the reliability of the data collected appropriate to the methodology conducted.

- **Quantitative Studies:** Provides specific reliability statistics for quantitative instruments, identifying how the statistics were developed. Explains specific approaches on how reliability will be addressed for qualitative data collection approaches.
- **Qualitative Studies:** Establishes consistency and repeatability of data collection through in-depth documented methodology; detailed interview/observation/data collection protocols and guides; creation of research data-base; and/or use of triangulation.

3. 4. 10. Issues of Trustworthiness or Ethical Consideration

This section should demonstrate adherence to the key principles of the respect, justice and beneficence in the study design, sampling procedures, and within the theoretical framework, research problem, and questions. You should clearly discuss how your data will be stored, safeguarded, and destroyed, as well as how the results of the study will be published. This section should also reference the approval to conduct the research, which includes subject recruiting and informed consent processes, in regard to the voluntary nature of study. Finally, the approval letter with the protocol number, informed consent/subject assent documents, site authorization letter(s), or any other measures required to protect the participants or institutions, must be included in an appendix.

ETHICAL CONSIDERATIONS

This section discusses the potential ethical issues surrounding the research as well as how human subjects and data will be protected. It identifies how any potential ethical issues have been and will be addressed.

- Provides a discussion of ethical issues related to the study and the sample population of interest.
- Describes the procedures for obtaining informed consent and for protecting the rights and well-being of the study sample participants.
- Addresses anonymity, confidentiality, privacy, strategies to prevent coercion, and any potential

conflict of interest.
<ul style="list-style-type: none"> • Describes the data management procedures adopted to store and maintain paper and electronic data securely, including the length of time data will be kept, where it will be kept, and how it will be destroyed. • <i>Note: Learners are required to securely maintain and have access to raw data/records for a minimum of three years. The learner must provide all evidence of data including source data, Excel files, interview transcripts, evidence of coding or data analysis, or survey results etc. No dissertation will be allowed to move forward in the review process if data are not produced upon request</i>
<ul style="list-style-type: none"> • Includes copy of the Informed Consent (Proposal) and Approval letter (Dissertation) in an Appendix.

3. 4. 11. Limitations and Delimitations in the Research Methodology Chapter

While Chapter 1 addresses the broad, overall limitations of the study, this section discusses, in detail, the limitations related to the research methodology and design and potential impacts on the results. The section also describes any limitations related to the methods, sample, instrumentation, data collection process and analysis. Other methodological limitations of the study may include issues with regard to the sample in terms of size, population and procedure, instrumentation, data collection processes, and data analysis. This section also contains an explanation of why the existing limitations are unavoidable and are not expected to affect the results negatively.

LIMITATIONS AND DELIMITATIONS
This section discusses in detail the limitations and delimitations related to the research methodology and design and potential impacts on the results.
<ul style="list-style-type: none"> • Describes any limitations and delimitations related to the methodology, sample, instrumentation, data collection process and analysis. Explains why the existing limitations are unavoidable. Note: This section must be updated as limitations emerge in the data collection/analysis, and then incorporated in the pertinent Chapters the limitations overall and how the study results were affected.
<ul style="list-style-type: none"> • Presents strategies to minimize and/or mitigate the negative consequences of limitations and delimitations.

3. 4. 12. Summary

This section restates what was written in Chapter 3 and provides supporting citations for key points. Your summary should demonstrate an in-depth understanding of the overall research design and analysis

techniques. The Chapter 3 summary ends with a discussion that transitions the reader to Chapter 4 about data analysis and interpretation.

CHAPTER 3 SUMMARY	
This section restates what was written in Chapter 3 and provides supporting citations for key points. It then provides a transition discussion to Chapter 4.	
<ul style="list-style-type: none"> Summarizes key points presented in Chapter 3 using authoritative, empirical sources/citations. 	
<ul style="list-style-type: none"> Presents alignment of the 10 strategic points, illustrating how the research questions align with the problem statement, methodology, design, instrumentation, data collection, procedures and data analysis approach. 	
<ul style="list-style-type: none"> Demonstrates in-depth understanding/mastery of the overall research methodology, design and data analysis techniques. 	
<ul style="list-style-type: none"> Ends Chapter 3 with a transition discussion to focus for Chapter 4. 	
<ul style="list-style-type: none"> The Chapter is correctly formatted to dissertation template using the Word Style Tool and APA standards. Writing is free of mechanical errors. 	
<ul style="list-style-type: none"> All research presented in the Chapter is scholarly, topic-related, and obtained from highly respected academic, professional, original sources. In-text citations are accurate, correctly cited and included in the reference page according to APA standards. 	
<ul style="list-style-type: none"> Section is written in a way that is well structured, has a logical flow, uses correct paragraph structure, uses correct sentence structure, uses correct punctuation, and uses correct APA format. 	

3. 5. Data Analysis and Interpretation

Data analysis is another part of research where novice authors often stumble. First, be clear that even some of the most prolific authors are “statistically challenged.” Get help from a mentor regarding statistics before you finish the protocol and meet with them regarding data collection? Consulting a statistician early is well worth the time and expense. The data analysis section should describe how data were handled, what statistical tests were done, and what statistical values were deemed to indicate a statistically significant difference. If necessary, explain why the statistical tests you selected were appropriate. Citing a reference for the appropriate statistical test is a good idea, if one is available, as it helps limit questions from the reviewers.

The purpose of this chapter is to summarize the collected data, how it was analyzed and then to present the results. This section of Chapter 4 briefly restates the problem statement, the methodology, the research question(s), hypothesis (es) or phenomena, and then offers a statement about what will be

covered in this chapter. Chapter 4 should present the results of the study as clearly as possible, leaving the interpretation of the results for Chapter 5. **Make sure your dissertation is changed to past tense and reflects how the study was *actually conducted*.**

3. 5. 1. Data Introduction

In this step, the researcher starts to reformulate the research question into a phrase and adopt it as a sub-title in the data analysis section in order to create a kind of balance in the table of contents between the theoretical and practical section of the whole research. Then he gives some primary hints and general information of the quality of the data. It involves mentioning the source, section, task, etc. from which the data are elaborated and yielded in relationship to the research sample and instrument. Then it explains briefly the question, question item and procedure through words and then introduces the aim behind collecting such type of the data in terms of their relatedness. Finally, this step ends with making a pre-reference to the table, graph or any other figure used with an idea about the techniques used in statistics and calculations.

INTRODUCTION TO THE SECTION	
<ul style="list-style-type: none"> • Reintroduces the purpose of the research study. 	
<ul style="list-style-type: none"> • Briefly describes the research methodology and/or research questions/hypotheses tested. 	
<ul style="list-style-type: none"> • Provides an orienting statement about what will be covered in the section of analysis. 	

3. 5. 2. Data Classification and Organization

This chapter typically contains the analyzed data, often presented in both text and tabular, or figure format. To ensure readability and clarity of findings, structure is of the utmost importance in this chapter. Sufficient guidance in the narrative should be provided to highlight the findings of greatest importance for the reader. Most researchers begin with a description of the sample and the relevant demographic characteristics presented in text or tabular format. Ask the following general questions before starting this section:

1. Is there sufficient data to answer each of the research question(s)/hypothesis (es) asked in the study?
2. Is there sufficient data to support the conclusions made in Chapter 5?
3. Is the study written in the third person? Never use the first person.
4. Are the data clearly explained using a table, graph, chart, or text?

Visual organizers, including tables and figures, must always be introduced, presented and discussed within the text first. Never insert them without these three steps. It is often best to develop all the tables,

graphs, charts, etc. before writing any text to further clarify how to proceed. Point out the salient results and present those results by table, graph, chart, or other form of collected data.

Quantitative data or numerical data can be analyzed through different software, as Cohen, Manion, Morrison (2007: 501) stated that, Numerical analysis can be performed using software, for example the statistical package for social sciences (SPSS, Minitab, EXEL).“ In short, making sense of data in terms of the participants“ definitions of the situation, noting patterns, themes, categories and regularities.” Qualitative data are analyzed through interpretation and decoding what the participants said. This step helps the researcher to find ways of how to summarize the meaningless data and start to give some little meaning to them through tables and what these tables include such as numbers, frequencies, ...etc.

3. 5. 3. Data Description and Reading

This section of Chapter 4 provides a narrative summary of the population or sample characteristics and demographics of the participants in the study. It establishes the number of subjects, gender, age, education level or employee classification, (if appropriate), organization, or setting (if appropriate), and other appropriate sample characteristics (e.g., education level, program of study, employee classification, etc.). The use of graphic organizers, such as tables, charts, histograms and graphs to provide further clarification and promote readability, is encouraged to organize and present coded data. Ensure this data cannot lead to anyone identifying individual participants in this section or identifying the data for individual participants in the data summary and data analysis that follows.

For numbers, equations, and statistics, spell out any number that begins a sentence, title, or heading – or reword the sentence to place the number later in the narrative. In general, use Arabic numerals (10, 11, 12) when referring to whole numbers 10 and above, and spell out whole numbers below 10. There are some exceptions to this rule: If small numbers are grouped with large numbers in a comparison, use numerals (e.g., 7, 8, 10, and 13 trials); but, do not do this when numbers are used for different purposes (e.g., 10 items on each of four surveys).

- Numbers in a measurement with units (e.g., 6 cm, 5-mg dose, 2%).
- Numbers that represent time, dates, ages, sample or population size, scores, or exact sums of money.
- Numbers that represent a specific item in a numbered series (e.g., Table 1).

This step involves the process of reading the data depicted in the tables and figures through frequencies and percentages. In short, this step is about explaining the data using both statistics and words, expressions and statements in association with numbers and symbols. It joins the previous steps with the subsequent steps and contributes to add some more meaning to the data. In addition, this step helps the researcher to find ways of how to summarize and describe the less meaningless data and start to

give some more meaning to them through expressions of language and statistics such as majority, minority.... etc.

DESCRIPTION OF THE DATA AND THE SAMPLE
<p>Provides a narrative summary of the population or sample characteristics and demographics.</p> <ul style="list-style-type: none"> • Quantitative Studies: Presents the "Sample (or Population) profile," using statistics for the demographics collected from or retrieved for the actual sample or population. <ul style="list-style-type: none"> ✓ If the actual sample is smaller than the <i>a priori</i> sample, the learner must discuss consequences (e.g., limitations, change of statistical analysis procedures, possibly even change of design). ✓ The second section of Descriptive Data should be "Descriptive statistics for the variables of interest" (analyzed to answer the RQs). For composite continuous variables, reliability coefficients computed on the study data precede the descriptive statistics and have to be compared with coefficients reported by instrument authors and prior users. Low reliability (< 0.7) may require changes in design and analysis (dropping variables with unreliable data). In case of changes of statistical analysis that became necessary during the computation of descriptive statistics, the learner will present and justify the new statistical procedures. <p>Qualitative Studies: Presents the "Sample (or Population) profile," using statistics for the demographics collected from or retrieved for the actual sample or population.</p>
<p>Includes a narrative summary of data collected (e.g., for qualitative studies, samples of collected data should be included in an Appendix.)</p>
<ul style="list-style-type: none"> • Uses visual graphic organizers, such as tables, histograms, graphs, and/or bar charts, to effectively organize and display coded data and descriptive data For example: <ul style="list-style-type: none"> ✓ Quantitative Studies: sample-level frequencies and descriptive or graphic comparisons of study-relevant groups. If the intended analysis involves parametric procedures, tests of assumptions are required to evaluate sample distribution, normality and homogeneity of variance. If nonparametric procedures are used, justification must be provided. ✓ Qualitative Studies: Discuss and provide a table showing number of interviews conducted, duration of interviews, #pages transcript; # observations conducted, duration, #pages of typed-up field notes, #

3. 5. 4. Looking for Justifications to the Data

This section presents a description of the process that was used to analyze the data. If hypotheses or research question(s) guided the study, data analysis procedures can be framed relative to each research

question or hypothesis. Data can also be organized by chronology of phenomena, by themes and patterns, or by other approaches as deemed appropriate according for a qualitative study.

After defining relations among the data and the research steps in relationship with the multiple reasons that affect the data. Then they will be connected with the main theories displayed in the theoretical framework of the study in terms of agreement and disagreement. In this step, the multiple justifications of the data and how they agree or disagree with the previous research done in the same area are sought and highlighted. By this step, it can be considered that data are meaningful and are the right answers to the research questions and problem. All in all, this step adds more meaning to the data.

DATA ANALYSIS PROCEDURES

This section presents a description of the process that was used to analyze the data. If hypotheses or research question(s) guided the study, data analysis procedures can be framed relative to each research question or hypothesis. For a qualitative study, data can also be organized by chronology of phenomena, by themes and patterns, or by other approaches as deemed appropriate.

Describes in detail the data analysis procedures.

- **Qualitative Studies:** Coding procedures must be tailored to the specific analytical approach; they are not generic.
 - ✓ Start discussion of data analysis procedures by identifying and describing the analytical approach (e.g., thematic analysis, Phenomenological analysis).
 - ✓ Describes coding process, description of how codes were developed, how categories were developed, how these are related to themes. Provide examples of codes and themes with corresponding quotations, demonstrating how codes were developed into themes.
 - ✓ Provides evidence of initial and final codes and themes in text or an Appendix.
- **Quantitative Studies:** The preparation of the data file ought to be presented BEFORE the Descriptive Findings. If the analysis is run as planned, the learner will present the results of the statistical procedures per RQ. If the analysis had to be changed, the learner will present the results of the new procedure(s) per RQ. No analyses unrelated to the RQs are allowed. Results tables have to be included in text. For each question, the learner will comment on the relevant statistics and will draw a conclusion in terms of accepting the null or the alternative hypothesis stated for that question. It is possible that a single statistical procedure may generate the statistics needed to answer multiple RQs—in that case, the learner will present the analysis results, with appropriate table(s), and then state and answer the RQs in due order.
- Explains and justifies any differences in why data analysis section does not match what was approved in Chapter 3 (if appropriate).
- **Quantitative Studies:** Changes in the analysis have to be justified earlier (as recommended

<p>above). In a rubric, the order of evaluation criteria is not important, BUT in the TEMPLATE, it is very important (changes may have to be made at different points in data processing for different reasons).</p>
<ul style="list-style-type: none"> • Provides validity and reliability of the data in statistical terms for quantitative research OR describes approaches used to ensure validity and reliability for qualitative data including expert panel review of questions, practice interviews, member checking, and triangulation of data, as appropriate.
<ul style="list-style-type: none"> • Identifies sources of error, missing data, or outliers and potential effects on the data. Discuss the limitations this places on the study results.
<ul style="list-style-type: none"> • Describe Power Analysis and Test(s) of Assumptions (as appropriate) for statistical tests.
<ul style="list-style-type: none"> • Quantitative Studies: Justifies how the analysis aligns with the research question(s) and hypothesis (es) and is appropriate for the research design. • Qualitative Studies: Justifies how the analysis aligns with the research question(s), and how data and findings were organized by chronology of phenomena, by themes and patterns, or by other approaches as deemed appropriate.

3. 5. 5. Results

This section, which is the primary section of this chapter, presents a summary and analysis of the data in a non-evaluative, unbiased, organized manner that relates to the research question(s) and/or hypothesis (es). List the research question(s) as they are discussed to ensure that the readers see that the question has been addressed. Answer the research question(s) in the order that they are listed for quantitative studies. Learners can organize data in several different ways for qualitative studies including: by research question, by themes and patterns, or by other approaches deemed appropriate for the study.

The results must be presented without implication, speculation, assessment, evaluation, or interpretation. Discussion of results and conclusions are left for Chapter 5. Refer to the APA Style Manual for additional lists and examples. In quantitative dissertations, it is not required for all data analyzed to be presented; however, it is important to provide descriptive statistics and the results of the applicable statistical tests used in conducting the analysis of the data. It is also important that there are descriptive statistics provided on all variables. Nevertheless, it is also acceptable to put most of this in the appendix if the chapter becomes too lengthy.

Required components include descriptive and inferential statistics. Descriptive statistics describe or summarize data sets using frequency distributions (e.g., to describe the distribution for the test scores in a class of 30 pupils) or graphical displays such as bar graphs (e.g., to display increases in a school district's budget each year for the past five years), as well as histograms (e.g., to show spending per child in school and display mean, median, modes, and frequencies), line graphs (e.g., to display peak scores for

the classroom group), and scatterplots (e.g., to display the relationship between two variables). Descriptive statistics also include numerical indexes such as averages, percentile ranks, and measures of central tendency, correlations, measures of variability and standard deviation, and measures of relative standing.

Inferential statistics describe the numerical characteristics of data and then go beyond the data to make inferences about the population based on the sample data. Inferential statistics also estimate the characteristics of populations and test hypotheses about population parameters using sampling distributions, estimation, or hypothesis testing. Table 2 presents example results of an independent t test comparing Emotional Intelligence (EI) mean scores by gender.

For qualitative studies, it is important to provide a complete picture of the constant comparative analysis conducted or of the coding pursued to arrive at a set of themes or conclusions about the subject. In qualitative studies, if thematic analysis is used, the questions to ask include the following:

1. What themes occur in interviews and field notes?
2. Does the study provide samples that the themes exist by using interviews or field notes?
3. What topics were mentioned most often?
4. What issues were most important to the people in the study?
5. How do the participants view the topic of research?
6. What kinds of relationships are apparent? (e.g., strict inclusion, cause-effect, function, sequence)?
7. How can the categories identified in the data be ordered into meaningful, grounded theories?

After completing the first draft of Chapter 4, ask these general questions:

1. Are the findings clearly presented, so any reader could understand them?
2. Are all the tables, graphics or visual displays well-organized and easy to read?
3. Are the important data described in the text?
4. Is factual data information separate from analysis and evaluation?
5. Are the data organized by research questions?

A figure is a graph, chart, map, drawing, or photograph is an example of a figure labeled per APA style. Do not include a figure unless it adds substantively to the understanding of the results or it duplicates other elements in the narrative. If a figure is used, a label must be placed under the figure. As with tables, refer to the figure by number in the narrative preceding the placement of the figure. Make sure a table or figure is not split between pages.

RESULTS

This section, which is the primary section of this chapter, presents an analysis of the data in a non-evaluative, unbiased, organized manner that relates to the research question(s) and/or hypotheses. List the research question(s) as you are discussing them in order to ensure that the readers see that the question has been addressed. Answer the research question(s) in the order that they are listed. (**Number**

of pages as needed)

Data and the analysis of that data are presented in a narrative, non-evaluative, unbiased, organized manner.

- **Quantitative data** are organized by research question and/or hypothesis. Findings are presented by hypothesis using section titles. They are presented in order of significance if appropriate.
- **Qualitative data** may be organized by theme, participant and/or research question.
- **Qualitative Studies:** Results of analysis are presented in appropriate narrative, tabular, graphical and/or visual format. If using thematic analysis, coding and theming process must be completely described in the results presentation. Integration of quotes in the results presentation to substantiate the stated findings and build a narrative picture is required. Data analysis should include narrative story for narrative analysis; case study summary for case study; model or theory for grounded theory. Learner describes thematic findings mostly in own words in narrative form as if they are telling their story or summarizing their experiences, and then use selected quotes (ideally one or few sentences, no longer than one paragraph) to illustrate.

- **Includes appropriate graphic organizers such as tables, charts, graphs, and figures.**
- **Quantitative Studies:** Results of each statistical test are presented in appropriate statistical format with tables, graphs, and charts.
 - ✓ Tables and/or figures are included for descriptive findings.
 - ✓ Tables and/or figures are included for assumption checks.
 - ✓ Tables and/or figures are included for and results.
- **Qualitative Studies:** As appropriate, tables are presented for initial codes, themes and theme meanings, along with sample quotes.

- Sufficient quantity and quality of the data or information appropriate to the research design is presented in the analyses to answer the research question(s) and or hypotheses. Evidence for this must be clearly presented in this section and in an appendix as appropriate.
- **Quantitative Studies:**
 - ✓ Discuss quantity in relation to the actual sample (or population) size,
 - ✓ Discuss quality in relation to sampling method, data collection process, and data completion/accuracy.
- **Note:** Dissertation Chair may request to review raw data at any time during the writing process. Additional data collection may be required if sufficient data is not present.

- **Quantitative Studies:**
 - ✓ Inferential statistics require tests of normality, tests of assumptions, test statistics and *p*-value reported for each hypothesis.
 - ✓ Control variables (if part of the design) are reported and discussed.

- ✓ Secondary data treatment of missing values is fully described.
- ✓ Outlier responses are explained as appropriate.

- **Qualitative Studies:**

- ✓ Qualitative data analysis is fully described and displayed using techniques specific to the design and analytic method used.
- ✓ Data sets are summarized including counts AND examples of participant’s responses for thematic analysis. For other approaches to qualitative analysis, results may be summarized in matrices or visual formats appropriate to the form of analysis.
- ✓ The responses are explained as appropriate. Findings may be presented as themes using section titles for thematic analysis, as stories for narrative designs, as models or theories for grounded theory, and as visual models or narrative stories for case studies.

- Appendices must include qualitative or quantitative data analysis that supports results in Chapter 4 as appropriate (i.e. source tables for t test/ANOVA; or coding and theming process or codebook, if not included directly in Chapter 4).

More Results about the Results Section

Though it may seem self-explanatory that the results section should include *only* the results, many authors place opinion and discussion in the results. The results section should simply state the findings, without bias or interpretation. If the methods section has listed experiments in order, the results section should follow the same sequence. At the very least the results should be provided in a logical sequence, often along the time line of the study. For instance, the results of the baseline measurement period should be presented prior to the results obtained after the intervention.

The results section lends itself to any number of potential constructs. Use tables or graphs to represent large volumes of data. If you use a table or graph, don’t repeat the information in the paragraph. Paragraphs that include large volumes of data read like the *Book of Numbers*.¹² After the fourth generation, the reader can’t remember which result matches which experiment, and loses interest. A table can be as onerous as the paragraph form if the table is allowed to “grown unchecked.” Try to keep tables to a single page. If that is not possible, consider dividing up the data among multiple tables (split along the experimental time line) or using graphs.

The results section should be written in the past tense. For example, “Moisture output was greater with system A than with system B.” This may seem confusing to novice authors and readers, but the rationale is sound. If you were to write, “Moisture output *is* greater,” it would imply generalizability to situations outside of the experiment. In *your* experiment the moisture was greater with system A under the conditions studied, but that does not imply that the moisture would be greater with system A under all other conditions in which the devices might be used. This is a subtle but important point; use the

past tense form in the results section.

Chatburn made the important observation that the results of a study do not prove anything.¹³ Research results can only confirm or reject a hypothesis. Each individual study adds to the collective understanding of the problem and adds evidence to support or refute a given interpretation. Major faux pas in the results section include: failure to provide the data that is critical to answering the research question; adding interpretation to the findings; and failure to address the statistics. If in the methods section you listed the statistical tests and the p value that was deemed to indicate a statistically significant difference, don't forget to address those in the results section.

3. 5. 6. Discussion Section

When starting the discussion consider the research question first. You posed the research question, explained your methods for answering it, and provided the results; now answer the question. The discussion is the place for interpreting the results. Use the statistical results to make conclusions regarding the research question. In other words, if the hypothesis is statistically confirmed by the results, what does that mean?

The discussion is usually the easiest section to write, and there is no “magic formula.” From my standpoint, if you are having trouble with the discussion. The most common mistake in the discussion section is overstating the findings. For instance, if you found that high-frequency ventilation improved oxygenation, you cannot infer that other outcomes (e.g., mortality) are also improved. If a new bronchodilator reduces airway resistance faster than the old one, you cannot infer that patients will come off the ventilator faster. That type of unjustified inference appears to indicate that the authors knew what they wanted the results to be prior to the study and that they set out to *prove* that the new treatment is better, not to *find out* whether the new treatment is better. Such bias is apparent in phrases such as “We have demonstrated that. . .”

The reader should easily follow the research question through the methods, results, discussion, and to the conclusion. As a good test, read your hypothesis and conclusion out loud. If you do not see an obvious logical connection between the two, there is a problem. The preponderance of references should be cited in the discussion section. A few historical references may be helpful for perspective. Most of the references should be recent and aid in the interpretation of your results. If a report you cited disagrees with your findings, clearly explain why.

The discussion section is your chance to review the current knowledge and explain how your study's findings add to the body of knowledge. You can provide opinion as long as you identify it as such.

3. 5. 7. Summary of the Chapter

This section provides a concise summary of what was found in the study. It briefly restates essential data and data analysis presented in this chapter, and it helps the reader see and understand the relevance of the data and analysis to the research question(s) or hypothesis (es). Finally, it provides a lead or transition into Chapter 5, where the implications of the data and data analysis relative to the research question(s) and/or hypothesis (es) will be discussed. The summary of the data must be logically and clearly presented, with the information separated from interpretation. For qualitative studies, summarize the data and data analysis results in relation to the research question(s). For quantitative studies, summarize the statistical data and results of statistical tests in relation to the research question(s)/hypothesis (es). Finally, provide a concluding section and transition to Chapter 5.

SUMMARY

This section provides a concise summary of what was found in the study. It briefly restates essential data and the data analysis presented in this chapter, and it helps the reader see and understand the relevance of the data and analysis to the research questions or hypotheses. Finally, it provides a lead or transition into Chapter 5 where the implications of the data and data analysis relative to the research questions and/or hypotheses will be discussed.

- Presents a clear and logical summary of data.
- **Quantitative Studies:** Summarizes the statistical data and results of statistical tests in relation to the research questions/hypotheses.
- **Qualitative Studies:** Summarizes the data and data analysis results in relation to the research questions. Summarizes data across research questions for case studies, narratives, and grounded theory.
- Discusses limitations that emerged based on data analysis and how the interpretation of results may be affected by the limitations. Data limitations are added to Chapters 1, 3, 5 and discussed as appropriate.
- Provides a concluding section and transition to Chapter 5.
- The Chapter is correctly formatted to dissertation template using the Word Style Tool and APA standards. Writing is free of mechanical errors.
- All research presented in the Chapter is scholarly, topic-related, and obtained from highly respected academic, professional, original sources. In-text citations are accurate, correctly cited and included in the reference page according to APA standards.
- Section is written in a way that is well structured, has a logical flow, uses correct paragraph structure, uses correct sentence structure, uses correct punctuation, and uses correct APA format.

3. 6. The Conclusions, Implications, Recommendations and General conclusion

3. 6. 1. Conclusions

Many journals require a conclusions section. State your conclusions in clear, simple language. Do not reiterate the data or the discussion. Then you can state your hunches and inferences, making very clear that they are speculation only (e.g, “Though the difference between the treatment groups was statistically significant, we suspect that the difference will not influence hospital mortality.”). Finally, in the conclusions section you should indicate what research questions should be answered next (e.g, “We are currently designing a study to determine whether the statistically significant difference identified in the present study significantly affects hospital mortality.”).

This section of Chapter 5 is organized by research question(s)/hypothesis(es), and it conveys the specific findings of the study. The section presents conclusions made based on the data analysis and findings of the study and relates the findings back to the literature, significance of the study in Chapter 1, Advancing Scientific Knowledge in Chapter 1. Significant themes/ findings are compared and contrasted, evaluated, and discussed in light of the existing body of knowledge. The significance of every finding is analyzed and related to the significance section and advancing scientific knowledge section of Chapter 1. Additionally, the significance of the findings is analyzed and related back to Chapter 2 and ties the study together. The findings are bounded by the research study parameters described in Chapters 1 and 3, are supported by the data and theory, and directly relate to the research question(s). No unrelated or speculative information is presented in this section. This section of Chapter 5 should be organized by research question(s), hypothesis (es), theme, or any manner that allows summarizing the specific findings supported by the data and the literature. Conclusions represent the contribution to knowledge and fill in the gap in the knowledge. They should also relate directly to the significance of the study. The conclusions are major generalizations, and an answer to the research problem developed in Chapters 1 and 2. This is where the study binds together. In this section, personal opinion is permitted, as long as it is backed with the data, grounded in the research methods and supported in the literature.

SUMMARY OF FINDINGS AND CONCLUSIONS

This section is organized by research question/hypothesis, and it conveys the specific findings of the study. It presents all conclusions made based on the data analysis and findings of the study. It relates the findings back to the literature, referring to the literature discussed in the Advancing Scientific Knowledge section and the Significance of the Study section in Chapter 1. It also discusses the significant themes and findings relative to the body of knowledge covered throughout Chapter 2.

- Organizes Chapter 5 using the same section titles as Chapter 4, by research question(s)/hypothesis (es) or by themes. Significant themes/ findings are compared and contrasted, synthesized and discussed in light of the existing body of knowledge covered in Chapter 2

<ul style="list-style-type: none"> Summarizes study findings. compares, contrasts and synthesizes study findings in context to prior research on the topic (Chapter 2). Provides a cogent discussion on how the study is aligned to and/or advances the research on the topic.
<ul style="list-style-type: none"> Illustrates that findings are bounded by the research study design described in Chapters 1, 2 and 3.
<ul style="list-style-type: none"> Illustrates how findings are supported by the data and theory, and how the findings directly align to and answer the research question(s).
<ul style="list-style-type: none"> Discusses significance (or no significance) of findings and relates each of the findings directly to the Significance of the Study section and Advancing Scientific Knowledge section of Chapter 1.
<ul style="list-style-type: none"> Refrains from including unrelated or speculative information in this section.
<ul style="list-style-type: none"> Provides a conclusion to summarize the findings, referring back to Chapter 1, and tying the study together.

3. 6. 2. Implications

This section should describe what could happen because of this research. It also tells the reader what the research implies theoretically, practically, and for the future. Additionally, it provides a retrospective examination of the theoretical framework presented in Chapter 2 considering the dissertation’s findings. A critical evaluation of the strengths and weaknesses of the study and the degree to which the conclusions are credible given the methodology, research design, and data, should also be presented. The section delineates applications of new insights derived from the dissertation to solve real and significant problems. Implications can be grouped into those related to theory or generalization, those related to practice, and those related to future research. Separate sections with corresponding headings provide proper organization.

- Theoretical implications.** Theoretical implications involve interpretation of the dissertation findings in terms of the research question(s) and hypothesis (es) that guided the study. It is appropriate to evaluate the strengths and weaknesses of the study critically and include the degree to which the conclusions are credible given the method and data. It should also include a critical, retrospective examination of the framework presented in the Chapter 2 Literature Review section considering the dissertation’s new findings.
- Practical implications.** Practical implications should delineate applications of new insights derived from the dissertation to solve real and significant problems. These implications refer to how the results of the study can be applied in professional practice.
- Future implications.** Two kinds of implications for future research are possible: one based on what the study did find or do, and the other based on what the study did *not* find or do. Generally,

future research could look at different kinds of subjects in different kinds of settings, interventions with new kinds of protocols or dependent measures, or new theoretical issues that emerge from the study. Recommendations should be included on which of these possibilities are likely to be most fruitful and why.

- **Strengths and weaknesses of the study.** This section discusses all limitations of the study. Additionally, it critically evaluates the strengths and weaknesses of the study. Finally, it discusses the degree to which the conclusions are credible given the methodology, research design, and data analysis and results.

IMPLICATIONS
This section should describe what could happen because of this research. It also tells the reader what the research implies theoretically, practically, and for the future.
<ul style="list-style-type: none"> • Theoretical implications. Provides a retrospective examination of the theoretical framework presented in Chapter 2 in light of the dissertation’s findings.
<ul style="list-style-type: none"> • Theoretical implications. Connects the findings of the study back to the theoretical framework/conceptual framework and the study results are discussed in context to how the results advance a practitioner’s knowledge of that theory, model or concept.
<ul style="list-style-type: none"> • Practical Implications and Future Implications. Connects the study findings to the prior research discussed in Chapter 2, and develops practical and future implications for research based on new insights derived from the research and how the results advance practitioners knowledge of the topic and how the results may influence future research or practice.
<ul style="list-style-type: none"> • Strengths and Weaknesses. Indicates all limitations of the study, critically evaluates the strengths and weaknesses of the study, and the degree to which the conclusions are credible given the methodology, research design, and data analysis and results.

3. 6. 3. Recommendations

This section allows the learner to add recommendations for future study based on the results of their authentic dissertation research. In this section, summarize the recommendations that result from the study. Each recommendation should be directly linked to a conclusion.

- **Recommendations or future research.** This section should present recommendations for future research, as well as give a full explanation for why each recommendation is being made. Additionally, this section discusses the areas of research that need further examination, or addresses gaps or new research needs the study found. The section ends with a discussion of “next steps” in forwarding this line of research. Recommendations relate back to the study significance and advancing scientific knowledge sections in Chapter 1.

- **Recommendations or future practice.** This section outlines recommendations for future practice based on the results and findings of the study, as well as, a full explanation for why each recommendation is being made. It provides a discussion of who will benefit from reading and implementing the results of the study and presents ideas based on the results that practitioners can implement in the work or educational setting. Unrelated or speculative information that is unsupported by data is clearly identified as such. Recommendations should relate back to the study significance section in Chapter 1.

RECOMMENDATIONS FOR FUTURE RESEARCH

This section should contain a minimum of four to six recommendations for future research as well as a full explanation for why each recommendation is being made. The recommended research methodology/design should also be provided.

- Lists a minimum of four to six recommendations for practitioners and for future research.
- Identifies and discusses the areas that need further examination, or that will address gaps or needs the study found.
- Provides recommendations that relate back to the study significance and advancing scientific knowledge sections in Chapter 1 and theoretical foundation section in Chapter 2
- Lists two to five recommendations for future practice.
- Discusses who will benefit from reading and implementing the results of the study.
- Discusses ideas based on the results that practitioners can implement in the work or educational setting.
- Omits unrelated or speculative information that is not unsupported by data.
- Provides recommendations that relate back to the study significance section in Chapter 1.
- The Chapter is correctly formatted to dissertation template using the *Word Style Tool* and APA standards. Writing is free of mechanical errors.
- All research presented in the Chapter is scholarly, topic-related, and obtained from highly respected academic, professional, original sources. In-text citations are accurate, correctly cited and included in the reference page according to APA standards.

3. 6. General Conclusion

Chapter 5 is perhaps the most important chapter in the dissertation manuscript because it presents the researcher’s contribution to the body of knowledge. For many who read research literature, this may be the only chapter they will read. Chapter 5 typically begins with a summary of the essential points made in Chapters 1 and 3 of the original research proposal and includes why this topic is important and how this study was designed to contribute to the understanding of the topic. The remainder of the chapter

contains a summary of the overall study, a summary of the findings and conclusions, recommendations for future research and practice, and a final section on implications derived from the study.

No new data should be introduced in Chapter 5; however, references should be made to findings or citations presented in earlier chapters. The researcher can articulate new frameworks and new insights. The concluding words of Chapter 5 should emphasize both the most important points of the study, study strengths and weaknesses, and directions for future research. This should be presented in the simplest possible form, making sure to preserve the conditional nature of the insights.

INTRODUCTION and SUMMARY OF STUDY

This section introduces Chapter 5 as a comprehensive summary of the entire study. It reminds the reader of the importance of the topic and briefly explains how the study intended to contribute to the body of knowledge on the topic. It informs the reader that conclusions, implications, and recommendations will be presented.

- Provides a comprehensive summary of the study framework including a recap of the 10 strategic points.
- Provides a comprehensive summary of the study framework including a recap of the 10 strategic points.
- Provides an overview of why the study is important and how the study was designed to contribute to our understanding of the topic.
- Provides a transition, explains what will be covered in the chapter and reminds the reader of how the study was conducted.

3. 10. List of references

The BIBLIOGRAPHY, REFERENCES or WORKS CITED is always the last section of the thesis or dissertation. The list of references should precede the Appendices. The BIBLIOGRAPHY, REFERENCES or WORKS CITED must list the sources alphabetically by the last names of the authors. The authors’ names should be listed exactly as they appear in the publication. The first page has a top margin of two inches. All references used in writing the dissertation (whether direct quotations or paraphrasing) should be included in a reference list/bibliography.

QUALITY OF SOURCES & REFERENCE LIST

For every in-text citation a reference entry exists; conversely, for every reference list entry there is an in-text citation. Uses a range of references including founding theorists, peer-reviewed empirical research studies from scholarly journals, and government/foundation research reports. The majority of all references must be scholarly, topic-related sources **published within the last 5 years**. Websites,

dictionaries, and publications without dates are not considered scholarly sources and should not be cited or present in the reference list. In-text citations and reference list must comply with APA 6th Ed.

- Ensures that for every in-text citation a reference entry exists. Conversely, for every reference list entry there is a corresponding in-text citation. Note: The accuracy of citations and quality of sources must be verified by learner, chair and committee members.
- Uses a range of references including founding theorists, peer-reviewed empirical research studies from scholarly journals, and government /foundation research reports. **Note: A minimum of 50 peers- reviewed, empirical research articles are required for the literature review.**
- Verifies that 75% of all references are scholarly sources within the last 5 years. The 5 year time frame is referenced at the time of the proposal defense date and at the time of the dissertation defense date. **Note:** Websites, dictionaries, publications without dates (n.d.), are not considered scholarly sources and should not be cited or present in reference list.
- Avoids overuse of books and dissertations.
 - ✓ **Books:** Maximum of 10 scholarly books that present cutting edge views on a topic, are research based, or are seminal works.
 - ✓ **Dissertations:** Maximum of 5 published dissertations.
- Section is written in a way that is well structured, has a logical flow, uses correct paragraph structure, uses correct sentence structure, uses correct punctuation, and uses correct APA format.

3. 11. Appendices

Appendices are used to place lengthy and detailed material that supports the main body of work. Appendices should be formatted in the same way as the body of the dissertation, thesis, or report. Note that materials traditionally included in an appendix, such as code or data tables, may be included as digital files. Appendices are also used to provide relevant supporting evidence for reference but should only be used if necessary. Students may wish to include in appendices, evidence which confirms the originality of their work or illustrates points of principle set out in the main text, questionnaires, and interview guidelines. Only subsidiary material should be included in appendices. Students should not assume that Appendices will be read by Examiners in detail.

Start each appendix on a new page. Place appendices in the same order as they are referred to in the body of the thesis. That is, the first appendix referred to should be Appendix A, the second appendix referred to should be Appendix B, and so on. Appendix formatting can be different to the main document.

4. Format Guidelines

Note

See the APA journal for more details about the format of dissertation writing.

5. Final Recapitulation of the Structure of the Dissertation

The Structure of the Dissertation The Elements of the Dissertation

1. Preliminary Pages

1. 1. The Front Cover Page or the Title Page
1. 2. Abstracts
1. 2. 2. Key Words
1. 3. Dedication
1. 4. Acknowledgment
1. 5. Table of Contents
1. 6. List of Tables
1. 7. List of Figures
1. 8. List of Symbols
1. 9. List of Abbreviations and Acronyms

2. General Introduction

2. 1. Background, Context and Theoretical Framework of the Study
2. 2. Statement of the Problem
2. 3. Research Questions and Hypotheses
2. 4. General Research Hypotheses
2. 5. Research Assumptions
2. 6. The Scope of the Study: Delimitations and Limitations
2. 7. Purpose of the Study
2. 8. Rational of the Study
2. 9. Significance of the Study
2. 10. The nature of the study
2. 11. Definitions and Operational Terms
2. 12. Organizations of the Dissertation

3. Literature Review

3. 1. Introduction to the Literature Review
3. 2. Theoretical Framework or Conceptual Framework
3. 3. Review of the Literature

3. 4. Summary

4. Research Methodology

4. 1. Introduction

4. 2. Research Questions or Hypothesis

4. 3. Research Approach

4. 4. 1. Research method

4. 5. Research Design

4. 6. Population, Samples and Sample Selection Procedures

4. 7. The Subject

4. 8. Data collection Procedures or Management

4. 9. Instrumentations or Sources of the Data

4. 10. Data Analysis Procedures

4. 11. Issues of validity

4. 12. Issues of Reliability

4. 13. Issues of Trustworthiness or Ethical Consideration

4. 12. Limitations and Delimitations in the Research Methodology Chapter

4. 13. Summary

5. Data Analysis and Interpretation

5. 1. Data Introduction

5. 2. Data Classification and Organization

5. 3. Data Description and Reading

5. 4. Looking for Justifications to the Data

5. 5. Results

5. 6. The discussion Section

5. 7. Summary of the Data Analysis Chapter

6. The Conclusions, Implications, Recommendations and General conclusion

6. 1. Conclusions

6. 2. Implications

6. 3. Recommendations

6. 4. General Conclusion

7. List of References

8. Appendices

Summary

Writing a research paper requires patience and practice. There are some simple rules that can assist the novice author in constructing a paper, and there are common pitfalls to be avoided. I would caution that the proper planning of a study is the best way to avoid problems at the writing stage. No amount of clever writing can cover for poor study design or execution. The quality of a dissertation is not only evaluated on the quality of writing. It is also evaluated based on the criteria that have been established for each section of the dissertation. The criteria describe what must be addressed in each section within each chapter. As you develop a section, first read the section description. Then review each criterion contained in this lecture as well as APA journal description. Use both the overall description and criteria as you write each section. It is important that each listed criterion is addressed in a way that it is clear to your chair and committee members at particular and your overall audience at large. You should be able to point out where each criterion is met in each section.

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