

# DISSERTATION AND THESIS GUIDELINES

APPLIED CLINICAL AND EDUCATIONAL SCIENCES  
INDIANA STATE UNIVERSITY

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## **Applied Clinical and Educational Sciences**

### **Dissertation and Thesis Guidelines**

This document is intended as a guide in preparation of your dissertation or thesis proposal and final thesis or dissertation. It provides guidelines for creation of a five chapter dissertation or five section thesis. Elements and sections of each chapter are discussed. Sections commonly presented within chapters are discussed. This is not meant to serve as an exhaustive listing of necessary sections, as the necessary elements will be mandated by the nature of your study and by your committee. It is also possible that you will create a dissertation with more than five chapters (six chapters being the most common alternative). You should work with your committee to negotiate the correct number of chapters for your work. This work ends with steps involved in the dissertation process (these being a bit more formalized than those in creation of a thesis).

### **Ethics and Plagiarism**

“Plagiarism is the act of presenting the words, ideas, or images of another as your own” (APA, 2020, p.254). The most common way to avoid plagiarism in your thesis or dissertation is to cite properly the ideas, words, or images, giving credit to the original authors for their work. Additionally, the work in the dissertation or thesis must be carried out by the author. There are acceptable and unacceptable ways of involving others in this work. It is acceptable to employ individuals for transcription purposes, as this does not change the nature of the collected data, just its format. Similarly, it would be ethical to employ someone to enter quantitative data into a statistical software program. It is also acceptable to employ individuals to copy-edit writing. If specified in the design and made clear to IRB, it may be acceptable to have trained individuals collect data. It is not acceptable to employ individuals to carry out analysis of data without giving them credit. This would represent a substantive part of the work, in essence making the person

carrying out the analysis your co-author. Similarly, interpretation of the data must be carried out by the author of the dissertation or thesis, for similar reasons. In qualitative work, it is acceptable to have trained individuals examine or evaluate emergent themes. It is important to note that you must alert the Institutional Review Board of anyone who would have access to the study data to ensure proper protection of participants.

### **Coherence of Dissertation and Thesis Proposals**

Coherence is key to the credibility of your research proposal (typically constituting the first three chapters: introduction, literature review, and methods). Much of your writing will be establishing contextual features that surround and support your research plan (such as the entire literature review chapter and many of the elements of the introductory chapter). However, the central core of your proposal is made up of three things, which must be coherent with one another. These three things are the purpose of the study (introductory chapter), the research questions (end of literature review chapter), and the methodology (methods chapter). Coherence is found when all three sections fit together. The purpose leads to the research questions, which in turn lead to the research methodology. If answered, the research questions would fulfill the stated purpose of the work. Additionally, the methods must be congruent with the research questions. All questions must have sufficient methods that are planned in order to gather data to answer them. No methodology should be proposed to collect data that are not tied to a research question.

### **Introduction Chapter**

The introductory chapter of your dissertation or thesis serves many purposes. While it leads off the work and orients the reader to the topic, many authors find it useful to work on the methodology (typically detailed in chapter three) prior to writing the first chapter. This is because the introductory chapter provides an overview of things to come. In brief, the

introductory chapter “introduces the topic, provides a *brief* overview, and then states the research problem” (Cone & Foster, 2006, p. 84). Suggested sections and/or elements of the introductory chapter are as follows (organized as best fits the writing style of the author; this is not a set order).

## **Introduction**

Your first section should orient the reader to your topic. You should quickly try to establish interest on the part of the reader and provide an overview of the topical area. This section typically begins with a broad look at the topic and gradually becomes more focused, leading up to provision of the purpose of the study at the end of this section or in the subsequent section. A description of the research issue or problem is often included to contextualize the upcoming purpose of the study.

## **Purpose of the Study**

In addition to providing an overview of the topic, establishing the purpose of the study is the most important thing to accomplish in the introductory chapter. The purpose of the study explicitly lists the objectives and goals of the study. The purpose of the study can range from one sentence to multiple paragraphs. Similarly, a dissertation or thesis may have one purpose or multiple related purposes. It is important for the purpose of the study to be properly contextualized as well as clear in intent. Thus, a shorter purpose section should be contextualized by the preceding sections and should likely be attached to the end of the introductory section. A larger purpose section has the space necessary to contextualize and list the purpose(s). Thus, it can constitute its own section with proper heading.

## **Significance of the Study**

This section may be called many things, such as importance of the study, need for the study, contribution to the field of research, or significance of the study. The purpose of this section is to make a case for the importance of the study that you will be detailing in the methodology chapter. In this, the author speaks to how their study might contribute to such things as the field of research, particular populations, particular professions, and/or theory. This section blends establishing a need for the study and the potential benefits of conducting the study.

## **Definitions of Terms**

It is important to be clear in how you are using terminology early in your work. To this end, you will provide your working definition of any term that could be construed in multiple ways by multiple readers.

## **Delimitations**

One purpose of the introductory chapter is to contextualize the study that will later be described in detail. To this end, it is important to convey any decisions that the author has made which constitute boundaries or limits on the scope of the study or particular assumptions which are central to the logic of the study and assumed as true (in the case of this particular study). Delimitations commonly involve the way that variables are treated or measured and sections of populations that are studied. The logic of your particular delimitations often stem from your theoretical perspective and/or the objectives of your study.

## **Literature Review Chapter**

The purpose of the literature review chapter is to provide an extensive overview of the theories and empirical work within all topical areas involved in the dissertation or thesis. When

the extant literature is relatively meager, the author should strive to take an exhaustive approach to the empirical literature on the topic and should also consider providing context by including literature on related topical areas. When the extant literature is extensive, the author should strive to provide an extensive and representative account of this large body of literature. The typical length of a dissertation literature review chapter varies from approximately 20 to 50 pages (Cone & Foster, 2006). Literature review chapters in theses are typically smaller than those supporting dissertations. The literature review chapter should provide an extensive overview and explanation of theoretical as well as empirical scholarship related to and/or surrounding the topics involved in the dissertation or thesis research. The literature review should also explore the theoretical framework employed in the study, if one is utilized. The literature review should be organized and presented using headings that reflect the relevant topics and subtopics. The literature review should also be organized in such a way that it logically contextualizes the research questions.

## **Research Questions**

Identify and list the questions that guide your research. There will be at least one, and maybe many, research questions that are addressed by your methodology. These research questions should be coherent with the stated purpose of the research. That is, if researched, they would help fulfill the purpose of the study.

Questions differ based on whether you are using a qualitative or quantitative paradigm.

**Qualitative** questions are broader and serve to guide the study in a particular direction or to a particular context. **Qualitative** research questions should identify the topic investigated and the context involved in the study. **Qualitative** questions do not typically make predictions or employ hypotheses.

**Quantitative** questions come in two forms: descriptive and inferential. A descriptive question quantitatively describes something that can be investigated about a particular group and denotes a dependent variable to be measured, such as what the self-efficacy of a given group is. Null hypotheses are not presented for descriptive questions. Inferential questions typically involve investigation of a relationship or comparison, such as whether two specified groups are significantly different on self-efficacy. They should convey information about the population studied as well as the relationship investigated (e.g., independent and dependent variables; predictor and criterion variables). Null hypotheses should be presented for each inferential question addressed in the study.

### **Methodology Chapter**

The "method section should provide sufficient details so that anyone reading it would be able to replicate your study in all essential aspects. There are a number of subsections that are included in nearly any method section. Exactly what content you cover, and in what order, will depend on your study . . . most method sections are 15 to 25 pages long for dissertations" (Cone & Foster, 2006, pp. 85-86). Quantitative and qualitative methods share many common sections, but also differ in some specific sections to be included in methodology. Further, the importance and focus within some sections may differ based on your methodological paradigm. Below you will find discussion of many of the common elements found in a methodology chapter. This presentation is not exhaustive. Additionally, you should consider these elements to be included, not necessarily sections to be included. That is, for some studies, various elements might be presented in the same section, while in others the detail demanded would necessitate distinct sections. The order of these elements is flexible and should be determined by the nature of the study and the writing style of the author (though some elements should logically come before

others). When in doubt about the order, you might use a journal article using similar methodology as a model.

## **Research Design**

Identify and discuss the design methodology for data collection. Speak to what methodology will be used and how this methodology will be used. As the remainder of the methodology chapter provides the detail of the utilized methods, this discussion need not be extensive. Rather, strive to provide enough information that the reader knows what design is used and how it fits with the research purpose and questions.

## **Philosophical Paradigm (Qualitative)**

Identify and discuss the philosophical paradigm that will guide your study. You should justify or explain the connection between your paradigm and your research questions. One example of choices of *philosophical* paradigm include Guba and Lincoln's (1994) discussion of positivism, post-positivism, constructivism, and critical theory. Additionally, in a qualitative study you may have a *methodological* paradigm which should also be discussed (e.g., phenomenology, ethnography, narrative, or grounded theory). You should note if the philosophical paradigm of qualitative inquiry is different from the literature base for your topic (primarily dealt with in the literature review chapter). For quantitative studies, the philosophical paradigm is predominantly positivism, which is not typically elucidated in quantitative dissertations.

## **Researcher as Instrument (Qualitative)**

It is important in *qualitative* research to contextualize yourself as a researcher as well as your experiences in terms of the intended topic and study. This section may also be entitled Reflexivity. In this section, you will speak to your connection to the topical area of study, including your training in the topical area to be studied as well as your training and experience

with qualitative research. You should also address assumptions, biases, and expectations that you bring to the study and how you will manage them.

## **Participants**

Cone and Foster (2006, p. 129) hold that a section on participants should seek to detail answers to three questions: Who will participate?, how many will participate?, and how will they be selected? It is important to note that during preparation of the dissertation or thesis proposal, this section would focus on the participants and characteristics that are targeted in the research. Any inclusion or exclusion criteria should be detailed. Once the study is completed, the Participants section should be reworked to present detailed information about those who did participate. According to the APA (2020, p.82), a participants section should:

Detail the major demographic characteristics of the sample, such as age; sex; ethnic and/or racial group; level of education, socioeconomic, generational, or immigrant status; disability status; sexual orientation; gender identity; and language preference, as well as important topic-specific characteristics (e.g., achievement level in studies of educational interventions).

## **Sampling Procedures**

Nearly all empirical research involves sampling in some fashion. For most studies, it is central to building a case for the quality of the results. According to the APA (2020, p. 79), this section provides a description of the procedures used to select participants. This involves discussion of the sampling methodology, percentage of those contacted that participated, and whether (and how) self-selection occurred by individuals or groups of individuals. Further, APA (2020, p. 79) suggests that the settings where data collection occurred be described, the dates of

data collection be provided, and agreements or payment to participants be disclosed. Any IRB agreements, ethical standards met, and/or safety monitoring should also be discussed.

### ***Sample Size, Power, and Precision***

Sample size and power do not always warrant a separate section, and this information is sometimes subsumed under Participants. According to the APA (2020, p. 79), this section should include the intended and achieved sample size (if different from intended). Additionally, speak to how the sample size was determined, including “power analysis, or methods used to determine precision of parameter estimates” as well as “explanation of any interim analyses and stopping rules employed” (APA, 2020, p. 79). Power analyses are typically employed with quantitative and inferential research questions. There is not a qualitative equivalent to power so, with qualitative research questions, you should make effort to justify the utilized sample as sufficient to address the question and fulfill the purpose.

### **Instruments**

Identify and describe all measures and instruments used in the study to collect data. Provide sufficient information so that the reader can tell what is being used, how it is being used, and how each measure is connected to the research questions. Information should be presented on the number and types of items involved and scales of measurement with quantitative data collection. Further, present any information on composite, aggregate, or scaled scores derived from the instrument.

When using instruments created by others, present and discuss evidence for validity of the instrument and reliability of the scores from the instrument (for quantitative measures). If there is no evidence, provide a plan for collecting data to establish evidence of reliability and validity. If

you are using a self-created instrument, describe the process of instrument development and provide a plan for collecting data to establish evidence of reliability and validity.

Instruments should be described in detail in the text of the methodology chapter. When self-created or when agreement has been reached with the copyright holder, the full versions should be included in the appendices. Prior to using previously developed instruments, you should contact the author of the instrument to arrange use, when appropriate. When agreement has been reached for use of a copyrighted instrument, communication indicating this agreement should be included in the appendices.

## Procedures

A procedures section outlines the flow of data collection. It typically proceeds chronologically in terms of steps in fulfilling the research plan. In this, you detail the actions you will take (or have taken) to collect data. This is an appropriate section to speak of steps to enhance quality of measurement, such as “training and reliability of data collectors” or “use of multiple observers” (APA, 2020, p. 79). In a qualitative study, this would be an appropriate section to speak about procedures utilized to establish trustworthiness of the research. You should choose a model of research trustworthiness and defend your methods in terms of it. For example Krefting (1996) credits Guba (1981) for naming four elements of trustworthiness: credibility, transferability, dependability, and confirmability. Various strategies may be associated with each of these.

- Credibility: prolonged engagement, persistent observation, triangulation, peer review, negative case analysis, referential adequacy, member checking.
- Transferability: Panel of authorities, comparison of sample to demographic data, time sample, dense description.

- Dependability: External auditor, dense description of context, triangulation, peer examination.
- Confirmability: Inquiry audit, triangulation, audit trail, reflexivity.

## Analytic Procedures

Whether your study is quantitative or qualitative, you should present information on how analyses will proceed. In a *quantitative* study, you will primarily speak to your statistical analyses. A description of each analysis to be conducted to address the research question and/or research hypothesis should be provided. Make clear what the independent and dependent variables are for each analysis and how these variables are comprised. Include a discussion of the assumptions of these tests and how they will be verified. In *qualitative* research, you should describe the process by which you will handle narrative data (e.g., coding and theming procedures or approach).

## Limitations

Discuss the limitations inherent in your methodological choices. This discussion should be comprehensive and thorough. Limitations often stem from philosophical paradigm, research method, sampling plan, instruments, and procedures. These limitations may include issues like limited evidence for validity of a particular instrument, use of an instrument for a different sample than was originally intended, sampling from a restricted range, and convenience sampling among others. Limitations show up at the end of the methodology chapter in a proposal. After carrying out the research, limitations are often reworked and joined with new limitations based on what actually occurred during the research and presented near the end of the Discussion chapter.

## *A Note on the First Three Chapters*

The future tense is used when crafting your proposal (typically the first three chapters), addressing the things that will be done. Once you have completed the work, this is changed to the past tense, addressing the things that you did.

## **Results Chapter**

The Results chapter discusses, at length and in-depth, the results of the data analysis. Thus, there is no results chapter in a proposal. There are no set sections in a results chapter, which should be built to address the results as they pertain to the research questions. A logical organization should be provided, often by research question or hypothesis, but sometimes by type of analysis conducted.

## **Quantitative Results**

There are a number of issues to address when reporting quantitative data. The Journal Article Reporting Standards (JARS) for APA (2020, p. 80-81) suggest that the following be considered when reporting quantitative results. In terms of statistics and data-analysis methods:

- Missing data, including the frequency or percentage of missing data, empirical evidence and/or theoretical arguments for the causes of missing data, and methods used to address missing data.
- Descriptions of each primary and secondary outcome, including the total sample and each subgroup that includes the number of cases, cell means, standard deviations, and other measures that characterize the data used.
- Inferential statistics. Results from all inferential tests should be reported, including exact  $p$  values and reporting sufficient set of statistics necessary in constructing the tests. Effect sizes and confidence intervals on estimates should be provided when possible.

Differentiation should be made between primary hypotheses and their estimates, secondary hypotheses and their estimates, and exploratory hypotheses and their estimates.

- Complex data analyses (such as SEM, HLM, factor analysis, if used). Information presented should include details of the estimated models, variance-covariance matrices, and identification of the statistical software utilized.
- Estimation problems, regression diagnostics, or analytic anomalies detected and solutions to the issues.
- Other data analyses performed. Differentiate between analyses that were planned and those that were not planned.

The assumptions underlying the inferential tests conducted should also be discussed. Report on how these assumptions were tested and whether or not they were met. Describe any problems with statistical assumptions or distributions which could impact interpretation of the findings.

## **Qualitative Results**

Qualitative research, by definition, is subjective and open to the interpretation of the researcher. In the Results section, the research must convey his or her interpretation of the data and provide rationale to support the interpretation. Although this section of the research report affords the researcher to assert some personal insights, the researcher must take care to stay focused and connect the data to the conclusions.

1. Cluster like concepts in data reporting. This will bring clarity to reporting .For example, you may discuss each theme you found individually along with the supporting information for that particular theme.

Results should be presented in a logical or sequential way so as to facilitate transition from one concept to another. Additionally, interpretations and supporting data should be reported in an order that runs from most important to least important.

2. Match data appropriately with themes and other consistencies identified in your literature review such as a typology or conceptual scheme or research questions so that a connection between data and stated themes is established. For instance, if reporting on differences between instructional and non-instructional teacher-student interactions, organize your results into those two categories (i.e., instructional and non-instructional teacher-student interactions).
3. Regardless of the specific format of your results section, always provide data (e.g., descriptions, quotes, and data from multiple sources) that back up your assertions. It may be useful to use diagrams, matrices, tables, or figures to illustrate the results.

### **Discussion Chapter**

The Discussion chapter is the portion of your work which allows speculation on the larger meaning of the findings. The focus of your discussion chapter should be on the following elements: the meaning of your results, the implications of your results, and connections between your results and previous literature and theory. It is important to note that you should not restate the statistics from the Results chapter in the Discussion chapter, as this would be redundant with previous information. Rather, speak to what these findings mean.

The Discussion chapter should be logically organized around the structure of your findings. Additionally, after completing discussion of meaning, implications, and connections with previous literature theory, it is common to include sections on future studies suggested by your study and its findings, implications for practice (if pertinent), and a discussion of the limitations of the study. The limitations section joins limitations previously discussed in the

Methods chapter of the proposal, which stem from design and instruments, with limitations based on what actually occurred during the study. Further, you should address generalization of findings based on your procedures and achieved sample.

### **Reference List**

Your reference list should include all the sources that are cited in your manuscript, and *only* those that are cited in your manuscript. Please note that if you use a secondary source, such as the Krefting 1996 book, which serves as the secondary source for the Guba 1981 article cited in this document, only the secondary source (i.e., Krefting, 1996) belongs in the reference list, and not the primary source (i.e., Guba, 1981). Students should use secondary sources sparingly when the primary sources are available.

### **Appendices**

Appendices come after your reference list, and may include your informed consent form(s), copies of measures used, and other supplementary materials. They should appear in the order in which they are cited in the manuscript.

### **Steps in the Dissertation Process**

There are many steps to successfully completing a dissertation. Here is presented the general steps to completing the dissertation. There are many levels of review. At any or all levels of review, multiple rounds of edits may be requested.

1. Successful passing of Preliminary Examinations.
2. Creation of the Introduction, Literature Review, and Methods chapters (proposal).
3. Committee review of proposal.
4. Successful defense of proposal.
5. Department chairperson review.

6. Preparation of IRB materials and gaining IRB approval (concurrent with department chairperson review).
7. Dean's office review.
8. Proposal and proposal approval sent to CGPS.
9. Data collection.
10. Data analysis.
11. Creation of the Results and Discussion chapters (completed dissertation).
12. Committee review of dissertation.
13. Successful defense of dissertation.
14. Department chairperson review.
15. Dean's office review.
16. CGPS review.

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