

DISSERTATION GUIDE

School of Education

Colorado State University

This is intended to assist advisors and doctoral students who are entering the candidacy phase of their programs. The first section outlines the advisor's responsibilities for helping the student to identify and appropriate committee and have a successful dissertation experience. Section II describes the elements critical to quality dissertation proposals and dissertations.

Section I Advisor Responsibilities

1. It is the advisor's responsibility to ensure that his/her student's final graduate committee has at least one *designated* member (e.g. identified by the School) who is an expert in the methodology/methods to be used. The SOE Graduate Programs Committee (GPC) shall develop a system to identify faculty members' areas of designated research expertise.
2. It is the advisor's responsibility to ensure that his/her student's final committee has at least one member who is a content expert in the area of the dissertation,
3. The advisor is ultimately responsible for assuring that the research is theoretically based and sound methodologically.
4. The advisor should make it clear to the student which committee member is the first point of contact for initial advising and feedback in the development of each section of the proposal and final dissertation. A content expert will probably take the lead for the literature review and discussion and a methods expert will probably take the lead on the methods and results chapters. If the advisor is both a content and methods expert, the advisor may take the lead on all chapters.
5. Students are encouraged to change committee members as is appropriate. If a student asks the advisor or other committee member to step down, the Director of Graduate Programs should approve changes to ensure replacement(s) provide needed expertise. (Faculty members may also choose to step down).
6. The advisor is responsible for making certain that the Human Subjects approval for the research is submitted after the methods are approved by the committee. In special cases where there is urgency to obtain Human Subjects Committee approval and begin data collection, a draft methods chapter and HRC 100 form may be tentatively approved by the student's committee before the formal proposal meeting and defense. The student needs to be aware that some changes in the methods and HRC 100 may have to be made later when the committee considers the full proposal for approval.

7. It is expected that the advisor shall be available to students on a regular basis and shall respond in a timely manner.
8. The advisor and methodologist must ensure that the student has relevant research competence that is specific to the methods proposed in her/his research prior to the conduct of the dissertation. This may require additional coursework or study related to the planned methods or content. Pilot work is always desirable preparation for a quality dissertation, and may be essential.
9. The dissertation advisor has the responsibility to set and enforce timelines for students to turn in materials (i.e., proposal and final dissertation materials.) Faculty must be given at least one week to read the proposal and final dissertation drafts prior to the scheduled examination date.
10. Although the advisor must be sensitive to semester deadlines and the student's personal timelines, such timelines are secondary to thoroughness and quality when scheduling proposal and final dissertation defenses. Furthermore, sufficient time should be allowed after the final defense to make necessary changes and corrections in order to meet Graduate School deadlines.
11. The advisor is responsible for assuring that the final documents (both proposal and final dissertation) are of appropriate length, scope, and quality of writing before it goes to committee. Both the proposal and the final dissertation should be written in proper SOE modified APA style, with tables and figures consistent with APA/SOE guidelines and the CSU Thesis Manual (which is available on the Graduate School Web site). <http://www.colostate.edu/Depts/Grad/thesis.htm>

12.

PROPOSAL	DISSERTATION
The typical length of the proposal is 30-60 pages total, with 15-30 pages for the literature review	The final dissertation should be a substantial document (typically ranging from 90-200 pages excluding appendices) that contains a thorough literature review (typically ranging from 20- 75pages).

13. The advisor should ensure that all committee members have read the final drafts of the proposal and dissertation, and agree that the document is ready before the defense is conducted.
14. The advisor must ensure a minimum of two hours is available at proposal and final defenses to allow all committee members to present their full critiques of the student's research;

15. The advisor will chair the proposal and final defense meetings. Before the meeting she/he will discuss expectations with the student who will be asked to prepare a brief presentation at the beginning of the meeting.

PROPOSAL	DISSERTATION
An electronic version of the approved full proposal will be submitted to the Graduate Programs Office. Titles of proposals will be posted on the Web.	The student must have successfully completed the final defense of the dissertation in order to participate in graduate commencement activities.

Section II Proposal/Dissertation Elements

The first university process related to the writing of the dissertation is the development of a proposal to be presented at the proposal meeting. The proposal is generally considered to be the first three chapters of the dissertation as indicated by SOE 32B. Proposal variations occur however, due to the selection of a research methodology. For example, strict adherence to some qualitative methodologies eliminates the need for a thorough review of literature until data has been analyzed. Students are encouraged to provide their committees with as much of the first three chapters as possible so that their committees can help them. The contents of the first three chapters are described in this section. The purpose of the proposal meeting is to obtain committee member signatures on form SOE 32A signifying that the committee agrees that the study should proceed as presented (with committee specified modifications). At the proposal meeting the advisor and student solicit advice about the technical soundness of the research, the thoroughness of the literature review needed at this point in the process and other possible recommendations.

The purpose of the dissertation is to provide students with experience in designing, conducting and writing original research. The dissertation as a document is self-referential in nature and consequently somewhat redundant. Students are expected to describe their study and to also articulate the process they used to arrive at all decisions and to defend the decisions. For example, students must describe participant selection procedures and also why these decisions were made.

The final dissertation must include, updates/expanded sections of the proposal (i.e. introduction, literature review, and methodology). Enough data must be collected to fully answer the research questions and support conclusions. In addition, the dissertation includes a presentation of findings (usually chapter 4, Results) with proper tables and figures or explanations, as appropriate, and a final section (usually chapter 5, Discussion) that draws meaning from the research and ties the findings to the relevant literature, settings, populations, and theories. The final chapter also includes recommendations and conclusions. The final dissertation should include all cited references, and it should append questionnaires (except copyrighted ones), interview schedules, permission documents (including the human subjects approval letter), and other information to assure possible replicability of the research.

Next, information about each element found in the dissertation is provided. For each of the elements listed, the short summary describes the element, explaining its purpose, and identifying quality indicators, common errors made and questions that help guide the development of each element. The following format is a traditional one that most doctoral students can use as a blueprint. The order in which the sections are written depends upon the logic behind how the student may best proceed in researching the problem. For example, there are differences in format, style, and the writing process related to quantitative, qualitative, and mixed design methodologies. (These are noted within each section).

Title

What. Contains key words or phrases to give a clear and concise description of the scope and nature of the study.

Why. The title guides the research and therefore reflects the purpose of the study. It also serves as the identifier for others to identify/find your study.

Quality indicators. The title should include key research factors (variables), type of participants, and methodology. Key words allow bibliographers to index the study in proper categories within data bases, especially ERIC.

Common errors. Title is trendy/journalistic but does not address research elements. Excess, empty words: a study of, research into...

Guiding questions. Does this title reflect the nature of the study? How descriptive is the title?

Abstract

What. Summary of the study with particular attention to method, results, and conclusions. Note the length limit on number of words.

Why. The abstract is entered into the *Dissertation Abstracts International* compendium. The Abstract may be all that most people read about the dissertation. The abstract informs other researchers whether or not they should obtain a complete copy of the document.

Quality indicators. Accurately describes the purpose of the research, the methodology and paradigm, key findings, and conclusions.

Common errors. The need for the study is emphasized, but the researcher's conclusions and recommendations are omitted.

Quality indicators. Follows the guidelines of the graduate school. Focuses on methods, findings and conclusions.

Guiding questions. Would someone reading the Abstract learn how the research contributes to the knowledge in the field?

Table of Contents

What. Is an outline of the entire document. Lists headings at appropriate level throughout the document with respective page numbers.

Why. The table of contents helps the researcher organize the dissertation and ensures that the correct APA headings have been used throughout the document. The different levels of headings make the dissertation more easily read, reflect the relationship of topics and sections to one another, and promote internal consistency within the document.

Quality indicators. Sub-headings are indented. The headings in the Table of Contents are worded exactly the same as those in the text. There is redundancy in the use of headings and consistency in the labeling of headings across chapters.

Guiding question(s). Do the heading levels correctly show the relationship of sections to one another so that subheadings are sub-topics within a larger content area? Are heading levels consistent throughout so that, for example, the heading levels used in the Table of Contents coincide with those in the chapters?

Chapter 1- Introduction

Background/Overview

What. The introduction of the proposal provides a description of the purpose of the study and a rationale for its significance. It also provides a broad overview of background information including an outline of the theoretical framework.

Why. Places the study in a context (i.e., historical, legislative, social, or economic) and lays the theoretical foundation for the study.

Quality indicators. Provides a contextual and theoretical overview in a summary format.

Common errors. Does not place the study in larger theoretical, social, legislative context, only summarizes Chapter 2. Does not link research to theory.

Guiding questions. Is the information provided adequate, giving readers enough information so that they can understand the context and general background of the study? Is a theoretical framework for understanding this study presented?

Statement of the Research Problem

What. Clearly describes the problem to be researched.

Why. Defines and guides the research study.

Quality indicators. Succinctly articulated purpose of the study. Purpose is consistent with the title and is a logical conclusion to the need for the study section.

Common errors. Problem statement is not consistent with the rest of the dissertation. Consistency and some redundancy is expected.

Guiding questions. Is the purpose of this study clearly stated?

Research Questions or Hypotheses

What. Research questions or hypotheses are generated from observations, theory, prior research and/or experience. If a study is not experimental, objectives or research questions are usually used. If the study is experimental, hypotheses are usually used. In some research designs, questions are identified by study participants following data collection procedures such as interviews and observations.

Why. Indicates the data to be collected and analyzed.

Quality Indicators. Consistent with the study purpose and with data collection and analysis. Questions should be broad enough to allow research exploration and specific enough to focus the study making it manageable.

Common errors. Too many questions or hypotheses. Double barreled questions. Scope of the research question too broad for the purposes of a dissertation.

Guiding questions. Are these hypotheses or questions consistent with the rest of the dissertation? Do research objectives reflect issues reported in the literature as needing to be addressed? Are they testable/answerable with the methods and analysis planned?

Definition of terms

What. A list of definitions for terms and concepts in a meaningful order that have significant meaning for the study.

Why. Provides readers with a reference to refer to as needed. Provides clarity for terms that have multiple meanings/interpretations.

Quality Indicators. Define terms in the context where they will be used--provide operational definitions as well as constitutive definitions. Constructed in list form—like a dictionary. Citations from literature where the definition was taken are provided, if applicable.

Common errors. Too many definitions (e.g., definition of terms widely understood or those not used within the text). No references to literature from which definition obtained.

Guiding questions. Are all ambiguous terms and terminology that may not be

familiar to readers defined?

Study Limitations and Delimitations

What. Delimitations are restrictions/bounds that researchers impose prior to the inception of the study to narrow the scope of a study. For example, the study might be delimited to Colorado teachers or to survey female students. Limitations are conditions that restrict the scope of the study or may affect the outcome. An example of a limitation is that a school district might only allow the researcher to collect data during a certain time of the school year, or that selected participants might not answer truthfully or at all.

Why. Delimitations and limitations are discussed to analyze possible threats to the study's validity and to acknowledge existing flaws to the research design.

Quality Indicators. Clear concise descriptions that indicate how the delimitations and limitations affect generalization of the study's findings.

Common errors. Confuse delimitations with limitations and don't reflect upon their effect on the study's generalizability.

Guiding questions. In focusing the study, how is the generalizability of findings decreased? What design factors might other researchers question as affecting the scope of the study's generalizability?

Need or Significance

What. Defines the problem in terms of issues or concerns relating to practices and/or gaps in existing research. Indicates how the selection of a methodology contributes to the discipline, and what knowledge and practices are to be gained by the completion of this study. May use conflict in findings of related research as justification for the study and/or cite literature calling for an investigation of the problem.

Why. This section is the "sales pitch" addressing direct and indirect benefits to the study's participants. Justifies and convinces the reader that the study is needed.

Quality indicators. Factual statements are supported by citations from the literature. Addresses several areas of need including how the methodology adds to the body of knowledge.

Common errors. Not complete, does not describe all potential contributions to the field. Need is based upon opinion and not upon existing research and theory.

Guiding question(s). Who (what individuals or groups) can use this information to change or improve the present situation? How will the study contribute to the fundamental knowledge of the profession? How can the results can be generalized beyond the bounds of study?

Researcher's Perspective

Before conceptualizing data analysis procedures, researchers should document their biases and assumptions related to potential findings. This activity is referred to as “coming clean” because the subjective basis for the study is identified. Identifying researcher biases brings further credibility to one's findings

Chapter 2–Review of Literature

What. A thorough synthesis and analysis of literature related to the study. This chapter reviews the field, substantiates the choices about the topic and methodology, and provides a sound theoretical/conceptual basis for the study. The process of reviewing literature consists of two phrases:

1. Problem exploration-definition stage
 - *conducted before proposal preparation to identify problem
 - *provides dimensions and limits of the problem area
 - *defines extent to which solution or answer is already known
 - *helps discern “What do we know the least about?”
 - *Identifies possible procedures (design, instruments; analyses) for conducting the study
2. Synthesis stage
 - *what is missing from the literature
 - *what did you learn from putting the literature review together
 - *what are the theories which are supported well by the literature
 - *what questions does the literature review suggest/generate

The timing of when this section is written depends upon the research questions. Sometimes a researcher will initially write a limited review of literature addressing a broad scope of knowledge. Later the researcher develops a thorough version of the chapter after the focus of the research has been refined as a result of data collection.

Why. Increases the likelihood that the study enhances the knowledge base, allows the researcher to acquire a thorough knowledge of the area and thus better design the study. Places the study in its context within the literature/field.

Quality Indicators. Data bases and key descriptors identified so that future researchers can replicate the work and know the parameters of the search. The literature review generally moves from broad topics to specific ones, ending with a paragraph on how the literature documents the need for your study. Organize the literature reviewed around theories, historical events, or your study's objectives so that it flows from topic to topic. Provide transition sentences between sections to facilitate reading and summarize all your information at the end of the Chapter. Accurate, verified citations. Free of plagiarism.

Common errors. Poor organization. Use of lots of quotes instead of a synthesis

of several authors and researchers. No analysis of the quality of the research and no distinction between theoretical and empirical works. Incomplete review (e.g. related fields are not addressed) particularly when there are few articles that directly address the topic; omission of literature that conflicts with the premise of the study or with the researcher's biases or use of just a few articles or texts. Over use of old and secondary references. There is no summary at the end of the chapter emphasizing the key points.

Guiding questions. Would someone outside of this field reading this chapter understand it? Have all key resources (i.e., books, articles, ERIC documents, dissertations, internet information, etc.,) relevant to understanding this topic been found?

Chapter 3—Method

The methods section provides a detailed description of all aspects of the design and procedures to be used in the study. This chapter describes the plan for conducting the study-- explaining what the researcher must do to collect data. The methods used must have a sound epistemological grounding, in that the procedures used are consistent and coherent with the theoretical and conceptual tenets of the methodological paradigm. The sample proposed must be drawn in a defensible fashion and be substantial (i.e., rich, theoretically and conceptually justified) enough to draw appropriate conclusions. The research methodology must clearly tie the methods and analyses being proposed (in chapter 3) to the ability to answer each research question or test each hypothesis.

Researchers must provide accurate, detailed descriptions of how the research was conducted to ensure the study can be replicated (redone) by others. Clear explanations of each step and justifications of implementation enables readers to reproduce the exact conditions of the original study and indicates that the researcher has carefully considered decisions regarding research procedures in light of accepted research practices reported in research texts and articles.

Research Design and Rationale

What. Describes the overall paradigm (e.g., quantitative, qualitative) to be used in collecting data and the specific approach within the paradigm that has been selected. A conceptual framework and rationale for using this approach is also presented.

Why. This is the roadmap for conducting the study. Having a plan for the research helps the research process flow smoothly and ensures that meaningful information will be obtained. It also decreases the chances the research process has to be aborted due to lack of available data or lack of participants.

Quality Indicators. The unique strengths of the research paradigm related to this specific study should be highlighted. The procedures outlined should answer questions or test hypotheses as efficiently, economically and validly as possible. Schematic (graphic) diagrams often aid in understanding the design.

Common errors. No justification of paradigm selection provided. Limited planning, which may later result in significant changes to the dissertation.

Guiding questions. How will the use of this design address the problem? Is the rationale for using this design clear? Will this information aid in the replicability of the study? Are the participants (or archived data files) accessible?

Participants and Site

What. The overall population (i.e., total set) of participants or documents which the research is addressing is defined. The group or sample that is to be included in the study is also described along with an explanation about the criterion for its selection. Included are the size of the sample and justification for inclusion in the study. In many qualitative studies, rationale for observing participants in specific settings is equally important and must be justified.

Why. Interpretation and generalizability of data depend upon the quality of the selection procedures and sample/participant descriptions. Poor selection and description decrease the usefulness of the information obtained in the study.

Quality Indicators. In quantitative studies, participants are representative of the larger population of interest. The characteristics of non-responders are described. In qualitative studies participants are selected as purveyors of desired information.

Common errors. Selection criterion not clearly delineated and/or followed.

Guiding questions. What information do the selected participants provide to the study? How are the participants similar or different from the overall population addressed in the problem statements? Are there common characteristics of non-responders that must be discussed?

Data Collection

What. The procedures used for collecting the data are described in detail. This section may include information about how data are collected (e.g., observation, interview, survey, test); instruments to be used and their reliability and validity; interventions employed; and possible threats to internal and external validity and measures taken to prevent their occurrence (in qualitative research this is referred to as “trustworthiness”). If possible, researchers should pilot or field-test their efforts in to ensure that the procedures for collecting information are feasible.

Why. The credibility and soundness of the research are ensured through well-constructed procedures.

Quality Indicators. The method used provides the data needed to address the research questions/test the hypotheses. Clear concise descriptions of the data collection procedure are provided to ensure replicability of the study. A pilot or field test has occurred and is described.

Common errors. The collection procedure is not linked to the research questions posed in chapter 1. For example, far more data are being collected than are needed or conversely necessary questions are not addressed. Procedures not described in enough detail to ensure replicability of the study. Justification for use of procedure with reference citations are not offered. Lack of organization in addressing topics. Information obtained can not be analyzed so that meaningful data are produced.

Guiding questions. Could anyone reading this understand the steps taken to collect data? Have alternative methods for collecting the data been considered? Are there good rationales why other methods of data collection will not suffice? Is it possible to pilot the procedures?

Measures

The instruments or procedures used are described, Information about tests, interview questions, observation protocols, surveys to be used is provided. Reliability, validity, or trustworthiness, threats to validity are addressed.

Quality Indicators. Clear concise descriptions of the data collection procedure are provided to ensure replicability of the study.

Common Errors. Justification for use of procedure with reference citations are not offered.

Guiding questions. Have alternative methods for collecting the date been considered? Are there good rationales why other methods of data collection will not suffice?

Data Analysis

What. This is a description of how the data will be organized to produce meaningful information in relation to the research questions and/or hypotheses. In quantitative research this step typically involves statistical techniques selected in accordance with the research design. Likewise, qualitative research data organization and coding conforms to the specific qualitative approach used (i.e., phenomenology, ethnography, case study, etc.).

Why. Selecting statistical procedures in the case of quantitative designs and coding methods in terms of qualitative studies a priori ensures that research objectives are met and that hard work has not been wasted because the data cannot be organized in a useful fashion. Prior consideration also helps researchers identify if they require additional information and support in using the technique they have selected. Clarity regarding analysis procedures facilitates the discussion about research findings.

Quality indicators. The data analysis procedure is clearly described in terms of how this procedure organizes data. The anticipated outcome of the analysis is consistent with the problem statement, research questions/hypotheses. For each

method used, present evidence indicating that the basic assumptions underlying use have been met.

Common errors. Method of analysis is not aligned with the research methodology selected. Researcher biases not identified. Researcher does not clearly understand the analysis procedure used and reasons for the use of these

Guiding questions. Why were these methods of analysis employed?

Chapter 4—Results or Findings

What. This is the outcome of the study. Information that has resulted from data collection and analysis is presented. Generally descriptive data are presented first and then findings organized around the research questions are reported. Supplemental analyses, ones not derived from the initial research questions, may be added for questions that emerge during data collection or analysis.

Why. The foundation for interpreting information, drawing conclusions and making recommendations related to the research is laid out in this chapter.

Quality Indicators. Use of tables and figures to graphically display findings. Findings are organized to parallel the research questions and hypotheses.

Common errors. Findings are not organized to be consistent with the research questions and are therefore, difficult to follow. Research questions are not repeated, rendering the reader unclear about to what the information reported refers. Tables and figures used are not summarized or referred to in the text. Summary statements or table not provided at the end of the chapter.

Guiding questions. How are the findings organized? Are graphic displays of data discussed and summarized in the text?

Chapter 5—Discussion

What. This is a key section of the dissertation--the “so what?” Given the previous information, the researcher is now free to explore and speculate about the findings. The voice of the researcher is heard in this chapter. This chapter consists of a summary of the entire study particularly findings, interpretation of the data, conclusions drawn from the information, implications and recommendations for practice/application. This chapter culminates in a statement regarding the needs for future research that includes ideas about new research questions and potential methodologies.

Why. This chapter allows the researcher to reflect upon the findings and determine what the contribution of this study is to both knowledge and practice. Demonstrates the researcher’s ability to reflect and draw meaningful conclusions about findings. Information about future research is included to assist other researchers in identifying potential studies and in an effort to promote cohesive research investigations into the topic.

Quality Indicators. Does not over-generalize findings. Links information from the study to the literature review. Articulates the study's relevance.

Common errors. Researcher is either too literal and refuses to interpret--only restating findings or is too liberal in applying findings to a myriad of problems beyond the bounds of the study. Does not reference the literature when discussing how this study confirms or contradicts previous literature.

Guiding questions. What does this study contribute to the knowledge base? What would improve the study? What are the surprises from the data? How does the literature agree or disagree with the data collected? Now that this study has been completed what should future research examine?

SUGGESTED FORMAT FOR A DISSERTATION PROPOSAL

There is no one correct format, but the following areas usually should be included in the proposal submitted to the graduate committee for approval of a dissertation topic. Qualitative studies may have somewhat different headings and organization. Creswell (1994) provides discussion and examples of qualitative and quantitative proposals. Use modified APA format for the proposal and references (see SOE handout). If major deviations from this typical format seem desirable they should be approved by your committee.

CHAPTER 1 - INTRODUCTION

Statement of the research problem (including background)

Research questions or hypotheses

Definitions of terms

Delimitations

Assumptions and limitations

Need for significance of the study

Researcher's perspective (may be in chapter 3)

CHAPTER 2 - LITERATURE REVIEW

An organized preliminary review of the literature should be written sufficiently to verify the need for and design of the study and to identify journal articles, dissertations, books and other materials that are related to the dissertation topic. The review may be organized historically, by major concept or theories, by research questions, or in some other logical way.

CHAPTER 3 - METHOD

Research design and rationale

Participants and site

Measures (variables, instrumentation, and materials) including validity and reliability or trustworthiness

Procedure (for data collection)

Data analysis

REFERENCES

Attach questionnaire, interview schedule, etc, as an APPENDIX