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A Guide to Quantitative and Qualitative Dissertation Research

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A Guide to Quantitative and Qualitative Dissertation Research

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DEDICATION

This book is dedicated to my doctoral students who have taught me a great deal as we collaborated on their dissertation research.

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PREFACE

The Nature and Writing of this Book

The impetus for writing this book on dissertation research began with an effort to improve the quality of dissertation supervision that I offer to my own doctoral students. The process for writing this book began with a selective review of dissertations I have directed in the past. This review led to a clarification of the content, process, and organization of quantitative and qualitative dissertation research based on the needs of doctoral students who are completing the research and the needs of readers who are consumers of the research.

This book begins with an explanation of the nature and characteristics of successful dissertation research. An approach to organizing the dissertation concept paper, the dissertation prospectus, the dissertation, and the dissertation manuscript is then described. The specific elements of the dissertation are described in detail. The book continues with an example of dissertation headings for a specific research question. The book ends with a dissertation research bibliography and four checklists for completing the dissertation concept paper, the dissertation prospectus, the dissertation, and the dissertation manuscript.

This book is not intended to reflect an analysis of the evolution of dissertation research as represented in the literature, a critical review of the content and process of dissertation research, nor a systematic analysis of the quality of dissertation research. The book does present my recommendations for designing and executing quantitative and qualitative dissertation research based on my own experience writing a dissertation, reading other dissertations, and directing dissertations. My intention was to present one consistent voice and line of reasoning with little interruption from citations, as opposed to synthesizing prior thought in the literature on dissertation research and then integrating this body of knowledge with my own point of view. This type of writing is a significant departure from my typical approach to scholarly writing. I have intentionally not reviewed other resources on dissertation research before or during the writing of this book in order to bring a fresh perspective to this topic. However, I did briefly examine the topics included in a variety of research texts to reduce the chances that I had inadvertently omitted a relevant research methodology. The specific content that I have included in this book can be found in multiple sources, as opposed to the contribution of a single author. If there was a chance that the idea I presented was a unique contribution of one author, I included a reference as is appropriate. I have included selected references from cognitive psychology in the section on “Recommended Organization of the Dissertation” to support my rationale for dissertation organization. I do recommend reading other resources on dissertation research to provide additional perspectives on dissertation research. Kerlinger and Lee (2000) and Patton (2002) are excellent general sources of information on conducting quantitative and qualitative research. A Web-site link to a listing of dissertation writing resources and a bibliography by Sarah Hartley on dissertation research are provided in this book. Any similarities between the recommendations in this book and recommendations made in other dissertation resources is purely coincidental and likely represents a prevalent view of dissertation research espoused in doctoral research courses, dissertation supervision, and doctoral defenses at my own university and other universities where I have served.

A Recommended Approach to Reading and Using this Book

This book can be used by doctoral students at several points in the process of planning and completing their dissertations. The following recommendations are designed to help students use the portions of this book that are most likely to meet their needs at the time. Of course these are only suggestions and the reader can choose to read portions or the entire book in whatever sequence that seems appropriate. The recommended sequence is as follows:

1. Read the Introduction, Nature of Dissertation Research, Potential Synergy in Dissertation Research, and Factors Contributing to Successful Dissertation Research to promote an understanding of the factors that contribute to successful dissertation research.
2. Since the dissertation is the most comprehensive document of the four dissertation manuscripts, skip to the chapters of the book on the Dissertation and read the Identification of Dissertation Components, Recommended Organization of the Dissertation, and Description of Dissertation Components to promote an understanding of the content and the sequencing of the dissertation.
3. As work begins on the dissertation concept paper, read the section of the book that describes the concept paper and than review the dissertation components that are a part of the concept paper to promote an understanding of the nature and specific elements of the document. Use the Checklist for Completing the Dissertation Concept Paper in Appendix B as a step-by-step guide for preparing the document.
4. As work begins on the dissertation prospectus, read the section on the prospectus and review the dissertation components that are a part of the prospectus to promote an understanding of the nature and specific elements of the document. Use the Checklist for Completing the Dissertation Prospectus in Appendix C as a step-by-step guide for preparing the document.
5. As work begins on the dissertation, review the chapters on the dissertation to promote an understanding of the nature, sequencing, and specific components of the document. Use the Checklist for Completing the Dissertation in Appendix D as a step-by-step guide for preparing the document.
6. As work begins on the dissertation manuscript, review the section on the manuscript to promote an understanding of the nature and specific elements of the document. Use the Checklist for Completing the Dissertation Manuscript in Appendix E as a step-by-step guide for preparing the document.
7. For additional information on preparing dissertation documents, refer to the Dissertation Research Bibliography in Appendix A.

CHAPTER 1
THE NATURE OF DISSERTATION RESEARCH

Introduction

A dissertation is a systematic investigation of a socially significant research question that makes a contribution to the literature and demonstrates the skill of doctoral students to conduct original research. Dissertation research is a collaborative process primarily involving students and their major professors with additional input and evaluation provided by the supervisory committee. Further input for students' research may be provided by fellow students and researchers in other organizations. Having a clear understanding of the nature and process of dissertation research, as well as a clear understanding of the organization of dissertation documents, helps students to make more effective use of their time, as well as more effective use of the time of their major professor and supervisory committee members.

The recommendations in this book are only intended to provide doctoral students[1] and their major professors with a *starting point* to discuss the development and organization of the student's dissertation concept paper, dissertation prospectus, dissertation, and dissertation manuscript. Each major professor works with his or her student to select an organizational schema that is appropriate for the nature of the student's research. The organization of dissertation documents varies according to students' research questions and the unique perspective each major professor brings to conducting research. The organization of dissertation documents also varies according to the traditions in specific academic departments and disciplines. Hopefully this book will help students and their major professors to clarify their own views of the content, process, and organization of dissertation research. While this book is written for students in the social sciences, many of the recommendations can apply to dissertation research in other disciplines as well. Also, while this book focuses on the dissertation, many of the recommendations may also apply to the Master's thesis.

This book describes the nature and process of dissertation research, as well as the recommended organization of the dissertation concept paper, dissertation prospectus, dissertation, and dissertation manuscript. The method of presentation and extent of referencing required is indicated for each section of the dissertation concept paper, dissertation, and dissertation manuscript. All headings in this book follow the 2001 edition of the American Psychological Association style manual.

A bibliography of some of the available resources on dissertation research is presented at the end of this book. In addition, Levine (2004) maintains a bibliography on thesis and dissertation preparation that can be used to inform doctoral students and their major professors of the range of current opinions on the content and process of dissertation research.

This book begins with a discussion of the nature of dissertation research, followed by a discussion of potential synergy in dissertation research and an identification of factors

[1] While doctoral students who have passed their preliminary examinations are typically referred to as "doctoral candidates," the more general term, "doctoral students" is used for the sake of simplicity in these guidelines to refer to students completing their dissertation research.

contributing to successful dissertations. Each of the four dissertation documents (dissertation concept paper, dissertation prospectus, dissertation, and dissertation manuscript) are then described. The book concludes with references, a bibliography on dissertation research, and checklists for completing each of the four dissertation documents.

This chapter begins with an explanation of the four components of dissertation research and continues with a description of a sequence for completing the four dissertation components and a discussion of the integration of quantitative and qualitative dissertation research. The chapter concludes with a discussion of the potential for researcher bias.

The Components of Dissertation Research

Conducting dissertation research involves preparing two to four documents. Ideally, students prepare the following four dissertation documents:

1. Dissertation concept paper
2. Dissertation prospectus
3. Dissertation
4. Dissertation manuscript

While only the *dissertation prospectus* and the *dissertation* are usually required, preparing a *dissertation concept paper* typically improves the quality of the proposed research by increasing the early involvement of supervisory committee members in the planning of the research. Submission and subsequent publication of the *dissertation manuscript* meets the obligation of psychologists to disseminate their research to the profession.

All four dissertation documents presented in this book use APA style (2001). The final preparation of the dissertation itself is typically governed by a combination of APA style and the dissertation guidelines of the university where students are seeking their degree, e.g. Florida State University Office of Graduate Studies (2004). The following sections describe the components of the dissertation concept paper, the dissertation prospectus, the dissertation, and the dissertation manuscript.

The Dissertation Concept Paper

The dissertation concept paper, sometimes referred to as a pre-prospectus paper, is a brief twelve to fifteen page research proposal that describes *what* might be studied in the proposed dissertation, *why* it needs to be studied, and *how* it might be studied. Writing a dissertation concept paper provides an opportunity for students, in collaboration with their major professors, to explore a potential dissertation research study. Obtaining feedback from supervisory committee members at a supervisory committee meeting helps students to prepare a better developed dissertation prospectus or to select a more promising research topic. [A dissertation concept paper and a dissertation research proposal that is required as part of the written and oral portions of the doctoral preliminary examination are redundant. In this case, the dissertation concept paper is not necessary.] The dissertation concept paper includes the following sections:

- Introduction (What will be included in the paper by the headings indicated as follows.)
- Statement of the Problem

- Research Questions
- Social Significance of the Problem
- Hypotheses (if needed)
- Research Design
- Variables
- Measures
- Treatment (if needed)[2]
- Participants
- Data Analysis
- Procedures
- References

Each of the above twelve topics included in the dissertation concept paper are described in Chapters 5 through 10 of this book. The specific presentation format and referencing requirements for each of the above components of the dissertation concept paper are described at the end of appropriate dissertation sections. Instructions for completing the dissertation concept paper are identified with the term "***Dissertation Concept Paper"*** in the bulleted item.

The Dissertation Prospectus

A dissertation prospectus is the complete plan for executing the dissertation and is built upon the dissertation concept paper. The prospectus provides an opportunity for the supervisory committee to review the appropriateness of the research questions based upon the student's critical review of the literature. Given that the research questions are appropriate, the prospectus then provides an opportunity for the committee to determine if the planned methodology will adequately answer the research questions. The student's ability to write and defend his or her research questions and methodology helps the committee to judge if the student has the requisite research skills necessary to conduct the research. The prospectus defense allows the student to defend to the supervisory committee members the importance and appropriateness of the research questions, as well as defending the proposed methodology for the dissertation. The dissertation prospectus includes the following components:

- Title page
- Signature page
- Table of Contents
- List of Tables (if needed)
- List of Figures (if needed
- Chapter 1 Introduction

[2] For experimental designs only.

- Chapter 2 Review of the Literature
- Chapter 3 Methodology
- Tables (if needed)
- Figures (if needed)
- References
- Appendices.

The recommended organization of the introduction chapter, the review of the literature chapter, and the methodology chapters are described in Chapters 5, 6, and 7 of this book. Portions of the introduction and methodology chapters of the dissertation prospectus are written in future tense.

The Dissertation

The dissertation is the final presentation of the design, execution, and interpretation of the research that was planned in the dissertation prospectus. The dissertation defense allows students to: a) demonstrate that the procedures agreed upon in the dissertation prospectus were faithfully executed, b) explain how the findings were derived, and c) defend the discussion, implications, and conclusion. Completing and defending the dissertation helps students to acquire the basic research skills necessary to function as a behavioral scientist. This section begins with an identification of the components of the dissertation and continues with a recommended organization of the dissertation. This section ends with comprehensive descriptions of dissertation components. The dissertation includes the following components:

- Title page
- Signature page
- Dedication (optional)
- Acknowledgements (optional)
- Table of contents
- List of Tables
- List of Figures
- Biography
- Abstract
- Chapter 1: Introduction
- Chapter 2: Review of the Literature
- Chapter 3: Methodology
- Chapter 4: Findings
- Chapter 5: Discussion
- References

- Appendices

The Dissertation Manuscript

The dissertation manuscript is a succinct presentation of the literature review, the research questions, the research methodology, the findings, the discussion of the findings, and the implications of the research. The objective of preparing the dissertation manuscript is publication in a peer reviewed journal, monograph, book, or book chapter. Assuming the acceptance of the dissertation manuscript for publication, the editorial review process provides external verification of the relevance and quality of the dissertation research. Regardless of the decision about the acceptance of the manuscript for publication, the review process often corrects or enhances the presentation of the dissertation research.

- Doctoral students have an ethical obligation to publish the results of their dissertations in the professional literature. Dissertations in the social sciences typically investigate variables and interventions that have important implications for the delivery of educational and social services. The knowledge gained from a dissertation needs to be readily available in the professional literature regardless of the results obtained.
- The specific topic organization of a dissertation manuscript will depend upon the manuscript preparation guidelines provided by the journal where the manuscript is submitted for publication. General recommendations for converting the dissertation into a journal article are provided in the APA Style Manual (American Psychological Association, 2001).
- It is possible that more than one manuscript may be created from the dissertation research, e.g. the findings and discussion are published in a refereed journal and a comprehensive critical review of the literature published in a lengthier book chapter.
- The results of some dissertation research have important implications for practice, including the creation of learning resources that can be used during the delivery of educational and social services, as well as being marketed directly to consumers as self-help products. Such resources could include Internet Web sites, DVDs, CD-ROMs, books, audio tapes, and videotapes. Researchers have a moral obligation to share the knowledge they contribute to the general public, as well as the profession, if such knowledge is applicable to specific needs, has been appropriately validated, is readable for the intended population, and is available in alternative formats for persons with disabilities (as appropriate).
- Presenting an initial version of the dissertation manuscript at a professional meeting provides an opportunity to obtain feedback that may improve the manuscript before submitting it to a journal.

A Sequence for Completing the Four Dissertation Components

The following recommendations provide a specific sequence for completing the dissertation concept paper, the dissertation prospectus, the dissertation, and the dissertation manuscript. More detailed checklists for completing each of the four dissertation documents are presented in the Appendences B, C, D, and E.

The Dissertation Concept Paper

1. Complete the critical analysis of the literature
2. Formulate the research questions
3. Write the introduction to the concept paper
4. Write the statement of the problem[3]
5. Create the hypotheses if needed
6. Describe the research design
7. Describe the variables
8. Describe the measures
9. Describe the treatment
10. Describe the participants[4]
11. Describe the data analysis[5]
12. Describe the procedures
13. Complete the references
14. Create the title page
15. Create the table of contents
16. Create the references section
17. ***Dissertation concept paper is complete***

The Dissertation Prospectus

1. Supervisory committee review of the dissertation concept paper
2. Write the biography section
3. Update and write the review of the literature as Chapter 2 of the prospectus
4. Write the introduction, Chapter 1, based on the dissertation concept paper
5. Write the methodology, Chapter 3, based on the dissertation concept paper
6. Create the appendices
7. Update the references from the dissertation concept paper
8. Update the title page
9. Create the dissertation prospectus signature page

[3] The statement of the problem is based upon the content and methodological gaps identified in the critical analysis of the literature.
[4] The term "participants" and "sample" can be considered synonyms. The term "participants" is used in this guide to refer to individuals who were previously characterized as the "sample."
[5] While multiple analytical techniques are typically used in a dissertation and "data analyses" is then the correct term to use, the term "data analysis" is used in this guide for the sake of simplicity.

10. Update the table of contents as needed
11. Create a list of tables if needed
12. Create a list of figures if needed
13. ***Dissertation prospectus is complete***

The Dissertation

1. Implement the recommended changes from the major professor and the doctoral supervisory committee review of the dissertation prospectus
2. Update the review of the literature, Chapter 2, as needed
3. Revise the introduction, Chapter 1, as needed
4. Change the tense in the methodology, Chapter 3, from future to past tense
5. Write the findings, Chapter 4, including appropriate tables and figures
6. Write the discussion, Chapter 5
7. Write the abstract
8. Update the appendices as needed
9. Update the references as needed
10. Revise the title page
11. Update the table of contents, list of tables, and list of figures
12. Write the acknowledgements if needed
13. Write the dedication if needed
14. ***Dissertation is complete***

The Dissertation Manuscript

1. Write the dissertation manuscript according to the submission guidelines for the journal selected for submission
2. Submit the manuscript for publication
3. Create print, audio, video, or Web-based learning resources from the dissertation research for use in service delivery or in a self-help mode, if appropriate.
4. ***Dissertation manuscript is complete***

The Integration of Quantitative and Qualitative Dissertation Research

There is disagreement among some social science researchers about the compatibility of quantitative and qualitative research methods. Some researchers believe that the philosophical assumptions and methods of quantitative and qualitative research are incompatible, and that the use of both methods is inappropriate, either in a single study or in a program of research. Other researchers believe that both methods are complementary and mixed-methods designs are

appropriate. The position taken in this book is that quantitative and qualitative research methods can be appropriately integrated to make distinct and substantive contributions to knowledge.

Potential for Researcher Bias

Both quantitative and qualitative researchers acknowledge that the potential for bias exists in research. However, quantitative and qualitative researchers often take different positions on the likelihood of bias impacting their research. Different points of view are also taken on the likelihood of success in controlling bias in research. Quantitative researchers promote objectivity as a fundamental aspect of science and contend that it is possible to answer research questions without bias invalidating the results. Qualitative researchers contend that bias is inherent, yet can be described clearly enough to allow the reader to judge if bias has inappropriately influenced the research.

It is likely that intentional researcher bias is relatively uncommon, i.e. the researcher consciously and intentionally manipulates the research to achieve an ulterior motive. Unintentional bias on the part of the researcher is more likely than intentional bias.

Bias can occur when the researcher:

- Believes in the need to address a specific social issue in the hope of being an advocate for change by demonstrating the need for change, or demonstrating the need for maintaining the status quo, based on their findings.
- Believes in the inherent relationship among variables or the efficacy of a theory or intervention, irrespective of the findings obtained in the dissertation.

Researcher bias can be introduced into dissertation research by:

- Selecting a research question to satisfy an ulterior motive.
- Selectively including or excluding portions of the professional literature.
- Wording operational definitions of terms to reflect a particular point of view.
- Selecting specific variables, measures, treatments, participants, and data analyses that increase the chances of obtaining specific predetermined findings.
- Selectively emphasizing specific sources from the literature review in the discussion of the findings.
- Selectively emphasizing specific discussion points in the implications section.

There are a variety of sources of potential bias in dissertation research, including the following:

- *Experience bias* with a variable being examined in the research, either positive or negative, e.g. an outstanding achievement or a serious problem.
- *Population bias* related to the perceived needs or characteristics of one or more groups of persons who are included as participants in the study. Group characteristics include age, disability, ethnicity, gender, immigration status, nationality, occupation, physical characteristics, poverty level, race, religion, sexual orientation, and social class.

- *Theory bias* resulting from the perceived efficacy of specific constructs used to conceptualize human development, personality, and service delivery interventions.
- *Intervention bias* stemming from personal experience using interventions in practice, leading to perceptions of the perceived effectiveness or ineffectiveness of a specific strategy of service delivery intervention.
- *Funding bias* resulting from the need to justify obtaining or maintaining funding for a product, service, or other research project.
- *Policy bias* stemming from the need to justify establishing, maintaining, changing, or eliminating one or more public policies.

CHAPTER 2

SUCCESSFUL DISSERTATION RESEARCH

Successful completion of the dissertation allows the doctoral student to make a contribution to the literature while completing the research requirements of the doctoral degree. The chances for success in dissertation research are considerably improved by taking advantage of opportunities for synergy. Synergy involves the interaction among ideas and individuals that often results in better outcomes than would occur from the work of a single individual pursuing a single line of inquiry. Synergy in dissertation research is possible as a result of input from other researchers in the field and the integration of a series of doctoral student research projects. For students choosing to pursue a career as a researcher, the potential synergy in dissertation research provides the foundation for a programmatic approach to research. Programmatic research systematically examines several different aspects of one or two topic areas over a period of time. Research that is programmatic in nature is more likely to make a substantive contribution to the literature and is more likely to be sustainable in terms of attracting external funding.

This chapter begins with a discussion of how collaboration contributes to the quality of dissertation research and continues with a discussion of the opportunities for integrating students' prior coursework, preliminary examination, and prior thesis/supervised research in executing the dissertation. The chapter ends with recommendations for maximizing six additional factors that contribute to completing a successful dissertation.

Collaboration Among Researchers

Effective doctoral research potentially builds upon the prior research of other doctoral students, as well as potentially building on the prior research of major professors, supervisory committee members, other faculty, fellow students, and researchers in other organizations.

- Major professors often pursue a program of research that creates a body of knowledge on one or more topics. This prior research, and the external funding that it sometimes provides, can create dissertation research opportunities for several students.
- Supervisory committee members and other faculty members might also be working in students' area of research and may provide literature reviews, experience with various research methodologies and measures, as well as recommendations for dissertation research.
- Current and former doctoral students who are working, or have worked, in the same topic area may provide similar assistance to that of supervisory committee members. Having the opportunity to discuss their research with other doctoral students allows students to clarify their thinking before and after discussing their ideas with their major professors and committee members.
- Researchers in other organizations may be creating measures and conducting research that directly relates to students' dissertation topics and may provide access to measures and literature that are difficult to locate.

Working as part of a larger research team may help to avoid duplication of effort, allowing students to benefit from the research results and the literature collected by other students, faculty, and researchers in other organizations.

Integration of Doctoral Student Research

The doctoral dissertation is optimally the culmination of several years of research by the student. By taking advantage of the synergy available from coursework, the Master's thesis[6], and any literature review or research proposal that is completed as a part of the doctoral preliminary examination, students can systematically examine various aspects of their topic before beginning the dissertation concept paper.[7] Integrating literature analyses from multiple sources provides students with a more advanced starting point for the literature review used in the dissertation concept paper and the dissertation prospectus. Also, feedback from faculty members who have evaluated the previous work of the doctoral student helps the student to think more critically about the body of knowledge for his or her dissertation. Finally, integrating multiple sources of previously analyzed literature by the student avoids the necessity of starting over with an entirely new topic for the dissertation prospectus. However, starting over with a new topic for the dissertation concept paper is not necessarily a problem, as the interests of students and major professors evolve over time. Also, new opportunities can emerge, such as external funding, that can make a change in topic desirable.

Figure 1 presents a potential integration of doctoral research that takes advantage of students' prior coursework, the preliminary examination, and prior thesis/supervised research in planning the dissertation research.

- Some students commit to an area of research early in their doctoral studies. In this case, students can systematically select topics for class papers and projects that explore various aspects of their area of research. Other students wait to make a commitment to an area of research. In this case, students can use their courses to explore various topics prior to selecting an area of research. In both cases, students can apply what they learn from class papers and projects to their dissertation research.
- The knowledge that students gain from class papers and projects can serve as a foundation for any literature review or research proposal that is completed as a part of the doctoral preliminary examination. The knowledge base from class papers and projects can also serve as a starting point for the literature review for any supervised research that is required when students have not completed a Master's thesis. Since the preparation of any preliminary examination literature review or preliminary examination research proposal and a supervised research project can overlap, the critical review for one paper can inform the critical review for the other paper, assuming that the topics are similar. Boxes are shaded in Figure 1 that primarily involve a critical review of research. Dotted lines indicate potential contributions to dissertation research when a literature review or thesis/supervised research project are required as part of the doctoral degree. Dotted lines also indicate potential contributions to dissertation research from other non-required

[6] Some Master's degrees do not require a thesis. In this case an equivalent supervised research project may be required. Even when a thesis has been completed, a student may still elect to complete a supervised research project with his or her major professor in order to conduct a pilot study for the dissertation.

[7] A dissertation concept paper may not be necessary when a dissertation research proposal is required as part of the written and oral portions of the doctoral preliminary examination.

student research that is completed collaboratively with faculty, students, and other researchers or student research that is completed independently.

- Any literature review or research proposal that is completed as a part of the doctoral preliminary examination can serve as the foundation for the elements of the literature review included in the brief introduction section of the dissertation concept paper. A preliminary examination literature review can be used more fully in the literature review chapter of the dissertation prospectus.
- Doctoral students who have the goal of becoming a faculty member as an occupational choice often voluntarily participate in additional collaborative research led by faculty or other advanced doctoral students in their institution. Students with academic career goals may also voluntarily participate in additional collaborative research led by researchers at other institutions, or less commonly, conduct their own independent research. In completing these research projects, these students may learn about literature, research designs, variables, measures, data analysis techniques, or research procedures that can be subsequently used in their own dissertation research.
- The introduction and methodology sections of the dissertation concept paper can be expanded to become the introduction and methodology chapters of the dissertation prospectus.
- The introduction, literature review, and methodology chapters of the dissertation prospectus become the corresponding chapters in the dissertation after the tense is changed from future to past tense in the introduction and methodology chapters.
- The five chapters of the dissertation are then synthesized into the appropriate sections of a dissertation manuscript that is submitted for publication.

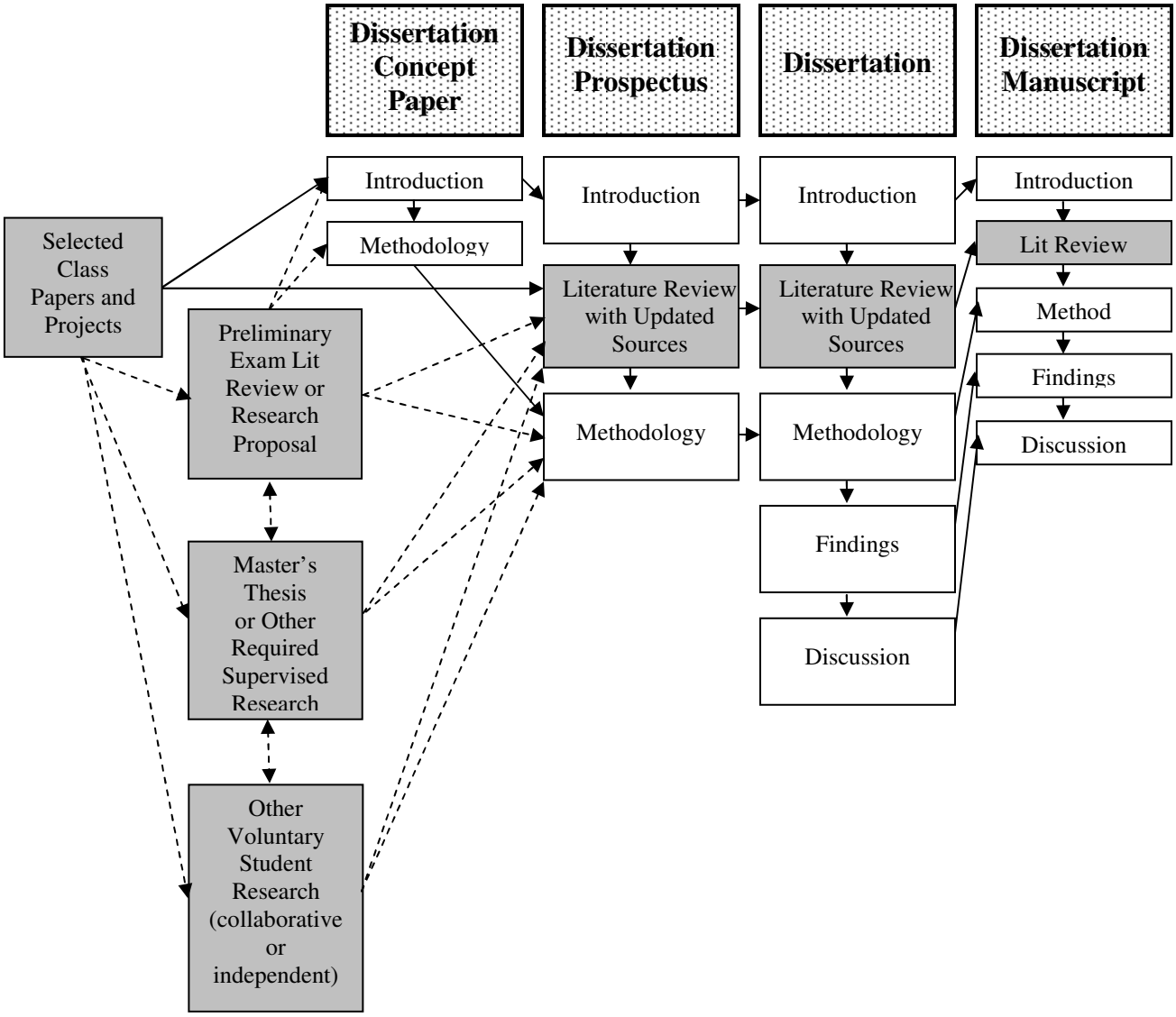

Figure 1: Potential Integration of Doctoral Student Research

Factors Contributing to Successful Dissertation Research

Successful dissertation research is a function of good communication, good planning, using an effective process for writing, attention to detail, openness to serendipity, and visualizing success. Recommendations related to these factors are as follows:

Good Communication

- Communicate effectively and regularly with your major professor, especially when difficulties arise.
- Communicate effectively and regularly with members of your doctoral supervisory committee, but check with your major professor before asking supervisory committee members to complete various tasks.

- Communicate effectively and regularly with your significant others (spouse, partner, family members, friends, or mentors) who can provide you with support during the writing of the dissertation.
- Communicate effectively and regularly with your significant others who are impacted by the time and effort required to complete a dissertation to help them understand the nature of the dissertation experience, making sure to especially nourish these relationships during times of stress.
- Communicate effectively and regularly with people in organizations who are providing you with assistance in collecting your data.

Good Planning

- Create and follow a specific plan for conducting your dissertation research, including the process for completing and organizing the dissertation, with input from your major professor.
- Use a checklist (see Appendices) to sequence and monitor your tasks, as well as noting progress towards finishing your dissertation.
- Exert consistent effort over time, adjusting the schedule for completing your tasks and writing specific sections of the dissertation according to unforeseen circumstances.
- Set realistic goals with input from the major professor, establishing specific dates for completing your tasks and writing specific sections of the dissertation.
- Select a dissertation topic that is motivational enough to sustain your interest over time.
- Discuss with your major professor how the dissertation can be used strategically to promote your future research and practice, further enhancing the motivation necessary to complete the dissertation.

Using an Effective Process for Writing

- Use the following sequence to draft and revise various sections of your dissertation:
  - review your outline for writing the next section,
  - read or review your source material,
  - read your previous writing to improve your transitions between sections,
  - reflect on what you have read,
  - write,
  - reflect on what you have written,
  - discuss what you have written with others,
  - revise what you have written as appropriate, and
  - repeat the cycle for the next section.

- Have a skilled editor review and edit the text of your dissertation before your major professor reads your manuscript, focusing your major professor's attention on content and process rather than focusing on grammar and clarity of expression.
- Take time for self-care as you plan, execute, and write the dissertation, using whatever combination of quality time with significant others, exercise, spiritual activities, and leisure pursuits that have helped you to manage stress in the past, leading to improved productivity when work on the dissertation resumes.

Attention to Detail

- Attend to the details involved in:
  - completing a systematic literature review,
  - establishing and executing the procedures for the dissertation,
  - completing data analyses, and
  - formatting the dissertation according to university guidelines.

Openness to Serendipity

- Pursue existing dissertation research goals, but be open to serendipity that may offer you unique opportunities to improve or extend your research.

Visualizing Success

Visualization can have a powerful impact on behavior and emotions. Although it sounds simplistic, visualizing success contributes to success. Imagining success makes it easier to think positively and to maintain motivation. Expecting and imaging failure has the opposite effect. It may be particularly important to visualize success during periods of substantial stress. The following positive visualizations have the potential to contribute to successful dissertation research.

- Visualize submitting the final approved copy of your dissertation to the university and being hooded at graduation.
- Visualize another doctoral student, or another researcher, reading your dissertation and incorporating what they have learned in their own research.
- Visualize your dissertation article being published in a refereed journal.
- Visualize making a refereed presentation on your dissertation at a professional meeting.
- Visualize reading new literature on your dissertation topic and seeing your work cited in a journal article.
- Visualize knowledge from your dissertation being incorporated in information resources used in human service delivery or as a self-help resource used by individuals who need assistance with a problem related to your dissertation topic.

CHAPTER 3

ORGANIZATION OF THE DISSERTATION

This chapter begins with a discussion of schema development and dissertation organization and concludes with a recommended organization of dissertation components.

Schema Development and Dissertation Organization

Writing and reading a dissertation is a learning event. Therefore, the organization of the dissertation should facilitate the learning of doctoral students and other researchers, as well as the learning of students, faculty, practitioners, administrators, and public policy makers who read the dissertation.

- One of the first tasks for doctoral students is to develop a schema for their dissertation research. A schema is an abstract structure of information (Anderson, 1984) that helps in organizing, remembering, and using information. We are more likely to remember and use information that fits our existing schemata (schemata is plural for schema).
    - In schema specialization (Rummelhart & Ortony, 1977), one concept is broken into component parts, e.g. the concept of research methodology is divided into the component parts of research design, variables, measures, participants, data analysis, and delimitations, each representing a section of Chapter 3 of the dissertation. This book is designed to promote schema specialization in dissertation research.
    - In schema generalization (Rummelhart & Ortony, 1977), concrete concepts are integrated together into more abstract concepts. Specific schemata are connected to derive a higher-order schema, e.g. the chapters and sections of the dissertation are connected to derive the higher order schema of dissertation organization. This book is also designed to promote schema generalization in dissertation research.
- The order of dissertation sections within chapters is often based on tradition, whereas the order of dissertation sections in this book is intended to maximize learning for the student and the reader. The order of the sections presented in the dissertation chapters is important to helping the reader understand the line of reasoning used to present the design, execution, and meaning of the dissertation research. Where appropriate, the content of one section builds upon the content of the previous section. For example, the research questions follow directly from the statement of the problem, the research design follows directly from the hypotheses, the variables follow directly from the research design, the measures follow directly from the variables, etc.
    - A procedural schema helps the learner to understand the sequence of steps necessary to complete a complex task (Mayer, 1983). The learner uses the procedural schema to understand how new knowledge gained by completing one task becomes antecedent knowledge for completing the next task and so forth. Competence in math provides an example of the importance of procedural knowledge in learning. Gaining knowledge of one mathematical construct is necessary before gaining knowledge of a subsequent construct, e.g. it is necessary to understand how to add a single column of numbers before understanding how to add two columns of numbers.

- Having a procedural schema is essential in understanding the relationships among the sections of the dissertation. For example, an understanding of the research question is prerequisite knowledge for understanding the research design, and an understanding of the variables is prerequisite knowledge for understanding the measures. Table 1 shows how the knowledge gained in a preceding section of the dissertation is necessary to gain knowledge in a subsequent section. Table 1 also shows the preeminence of the research question in dissertation research.
- Figure 2 provides a procedural schema for sequencing dissertation research and also shows how research questions drive the dissertation research. The research question is the single most important aspect of dissertation research, or any other research for that matter. A well developed research question is the foundation for valid research. If the research question is flawed, no amount of sophisticated research design, instrumentation, or data analysis can save the project from failure.

Table 1
Questions Answered in the Sequencing of Sections of the Dissertation

---

1. What do we tentatively know about one or more socially significant topics from our review of the literature?
2. What are the content and methodological gaps in what we tentatively know about the topics?
3. What ***research questions*** can we ask that have the potential to narrow the gaps in our knowledge?
4. What ***research design*** might help us answer our ***research questions***?
5. What are the ***variables*** that we will include in the ***research design*** that might help us to answer our ***research questions****?*
6. What are the ***measures*** for our ***variables*** in the ***research design*** that might help us to answer our ***research questions***?
7. What are the ***treatments*** used in the ***research design*** that might help us to answer our ***research questions***? [Quantitative experimental research]
8. Who are the ***participants*** who will complete the ***measures*** for our ***variables*** in the ***research design*** that may help us to answer our ***research questions***?
9. What strategies will we use in ***analyzing the data*** from the ***participants*** who complete the **measures** that represent the ***variables*** in the ***research design*** that might help us to answer our ***research questions***?
10. What are the anticipated ***delimitations*** that will constrain what we will learn from ***analyzing the data*** from the ***participants*** who complete the ***measures*** that represent the ***variables*** in the ***research design*** that might help us to answer our ***research questions***?
11. What ***findings*** did we obtain from ***analyzing the data*** from the ***participants*** who completed the ***measures*** that represent the ***variables*** in the ***research design*** that might help us to answer our ***research questions*****?**
12. Given what we know from our ***review of the literature*****,** what can we state in the ***discussion*** that tentatively explains our ***findings*** and thus helps us to answer our **research** ***questions***?
13. What were the unanticipated ***limitations*** in conducting the study that constrained our ability to answer our ***research questions*** and what ***implications*** do these limitations have for future research?
14. Given the tentative answers to our ***research questions*** that were presented in the ***discussion***, what ***implications*** exist for creating or revising ***theory***, planning future ***research***, and improving ***practice***?

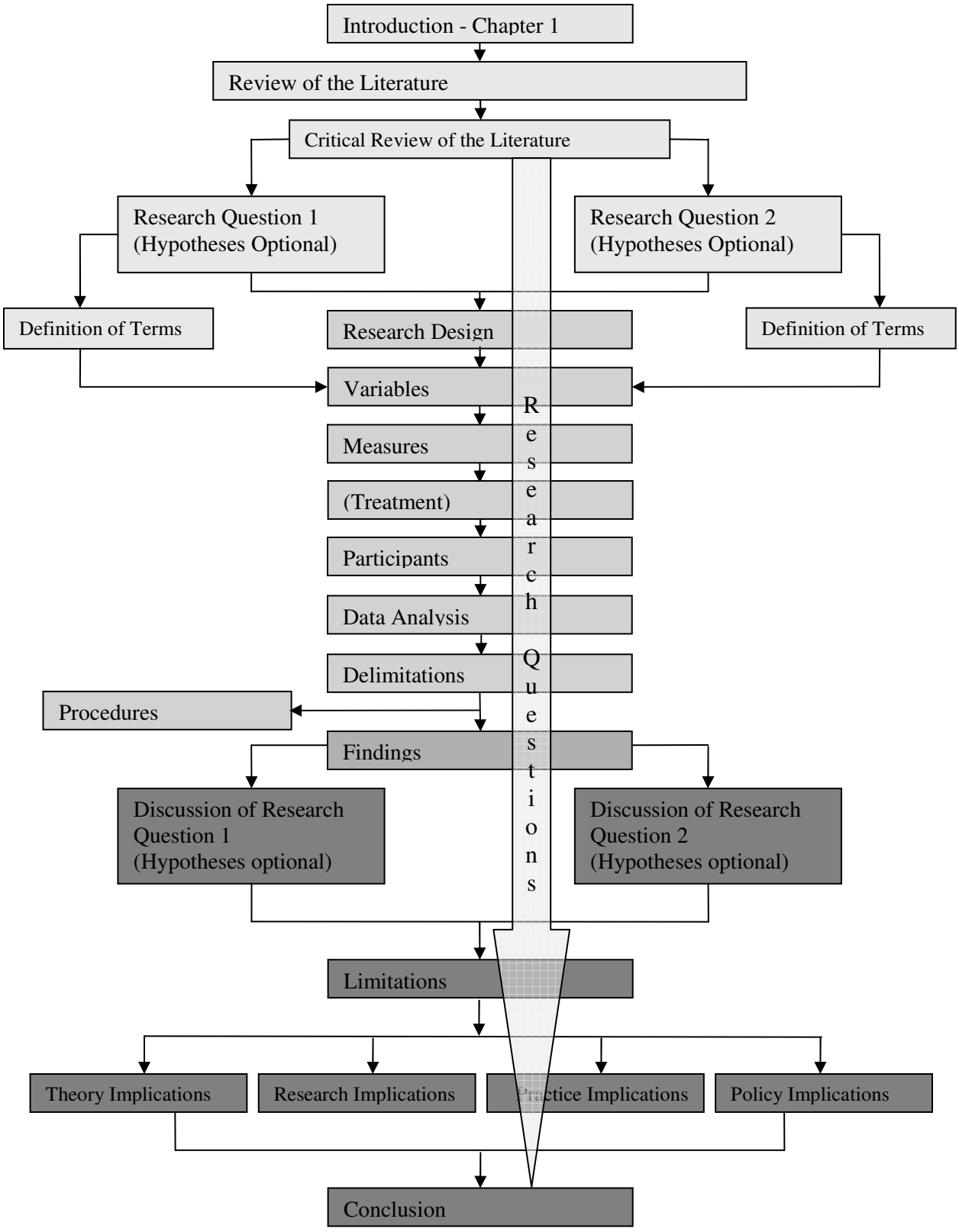

Figure 2: The Sequencing of Sections of the Dissertation

- Doctoral students have varying degrees of research knowledge before they begin their dissertation.
    - For doctoral students who are experienced researchers, this book is intended to clarify the content and process of dissertation research, leading to an even more specialized schema for dissertation research.
    - For doctoral students with less experience, a structure like the recommended dissertation organization presented in this book may help students to develop a schema for better understanding their dissertation research. Merrill (2002) stated that if the learner has an insufficient model to organize new knowledge, then a structure is needed to develop the schema necessary to acquire the new knowledge.
- Some content in the dissertation, such as research questions and hypotheses, are repeated multiple times. This occurs because the previous content directly relates to the subsequent content being presented, e.g. repeating the research questions after the critical review of the literature, repeating the research questions with the hypotheses, repeating the hypotheses (or research question in qualitative research) with the findings, and repeating the hypotheses (or research question) with the discussion. Rather than being overly repetitive, this approach helps the reader to avoid moving back and forth between chapters and sections in order to have the information needed. For the most part, the organization schema for the dissertation presented in this book takes a "just-in-time" approach by providing content at a time that it is logically needed.
- The recommended organization for Chapters 1, 2, and 5 are the same for both quantitative and qualitative dissertations, with the exception that Chapter 5 of a qualitative dissertation is concerned with research questions as opposed to research questions and hypotheses. The organization of Chapters 3 and 4 of a qualitative dissertation will vary depending on the specific qualitative methodology used in the research. Dissertations that involve action research or historical research would be organized differently than the schema presented in this book. The bibliography in Appendix A provides recommendations for organizing and completing an action research dissertation or a historical dissertation.

A Recommended Organization of Dissertation Components

Table 2 presents a recommended organization for the components of the dissertation. The major components of the dissertation include the following: Title, Signature Page, Dedication, Acknowledgements, Table of Contents, List of Tables, List of Figures, Biography, Abstract, Chapter 1 (Introduction), Chapter 2 (Review of the Literature), Chapter 3 (Methodology), Chapter 4 (Findings), Chapter 5 (Discussion), References, and Appendices of the dissertation.

Table 2
The Organization of Dissertation Sections[8]

Title
Signature Page
Dedication
Acknowledgements
Table of Contents
List of Tables
List of Figures
Biography
Abstract
Chapter 1 – Introduction
    Statement of the Problem
    Research Questions
    Social Significance
Chapter 2 – Review of the Literature
    Critical Analysis of the Literature
    Research Questions
    Operational Definition of Terms
Chapter 3 – Methodology
    Hypotheses [Quantitative][9]
    Research Design
    Variables
    Measures
        (Identify first measure)
            Statement of Purpose
            Development of the Measure
            Scales and Subscales
            Potential Bias in the Measures
            Standardization
                Adequacy of Normative Groups
                Representativeness of Normative Groups
            Reliability
            Validity
                Face validity
                Content validity
                Construct validity
                Factorial validity
                Convergent validity
                Discriminant validity
                Criterion validity
            Summary of Evidence of the Appropriateness of the Measures [Quantitative]

[8] Headings that are unique to quantitative and qualitative research are indicated in brackets.
[9] For qualitative research, hypotheses are not generally used. Therefore, in Chapter 3 of a qualitative dissertation the "Hypotheses" section is replaced by a "Research Questions" section.

- (Identify and provide evidence of the quality of any subsequent quantitative measures)
- Measures [Qualitative]
  - (Identify first measure)
    - Transparency
    - Coherency
    - Credibility
      - Relevancy
      - Plausibility
      - Competency
    - Summary of Evidence of the Appropriateness of the Measures [Qualitative]
  - (Identify and provide evidence of the quality of any subsequent qualitative measures)
- Treatment [Quantitative]
- Participants
  - Sampling
  - Population
  - Characteristics of the Participants
- Data Analysis
  - Research Questions and Hypotheses
  - Data Analysis Validity
- Delimitations
- Procedures
  - Procedures Prior to Data Collection
  - Procedures During Data Collection
  - Procedures After Data Collection

Chapter 4 – Findings

- Research Questions
  - Hypotheses [Quantitative]
- Additional Findings [Quantitative]

Chapter 5 – Discussion

- Research Question
  - Hypothesis [Quantitative][10]
    - Summary of the Findings
    - Discussion of the Findings
- Additional Findings [Quantitative]
  - Summary of Additional Findings
  - Discussion of Additional Findings
- Limitations of the Study
  - Limitations in Sampling
  - Limitations in the Measures
  - Limitations in the Treatment
  - Limitations in the Data Analyses
- Implications
  - Implications for Theory Development
  - Implications for Research

[10] In qualitative research, the "Hypotheses" section is typically omitted and the summary of the findings and the discussion of the findings increase one heading level.

Implications for Practice
Implications for Education and Training
Implications for Public Policy
Conclusion
References
Appendices

CHAPTER 4

THE INITIAL PARTS OF THE DISSERTATION

This chapter describes the initial components of the dissertation, including, Title, Signature Page, Dedication, Acknowledgements, Table of Contents, List of Tables, List of Figures, Biography, and Abstract.

Title

The title of the dissertation should indicate the variables, participants, and setting for the research, or the treatment, variables, participants, and setting for the research. The title is either a synthesis of multiple research questions posed in the dissertation, or a change from a question into a declarative sentence for one research question. It is important that the title be consistent with the research questions to avoid creating cognitive dissonance and confusing the reader. The title becomes an important advance organizer to help the reader more clearly understand the nature of the research. The first impression of a research study results from reading the title in a bibliographic data base. Reading the dissertation title also helps the reader to decide whether or not the content of the dissertation is relevant to his or her own research. If the dissertation research appears relevant, the next step for the reader would be to read the abstract.

Examples of titles for two quantitative research designs (co-relational and experimental) and one qualitative research design (case study) follow.

The Contribution of Cognitive Distortions and Negative Career Thoughts to Variability in Career Indecision (*variables*) for College Students (*participants*) Receiving Career Counseling at a College Career Center (*setting*)

The Effectiveness of Cognitive Restructuring (*treatment*) on Career Indecision (*variable*) among College Students (*participants*) Receiving Career Counseling at a College Career Center (*setting*)

Cognitions (*variables*) of Students with Undeclared Majors who are on Academic Probation (*participants*) and Enrolled in a Liberal Arts College (*setting*)

Dissertation titles most commonly identify the variables used in the research. Some titles indicate the participants in the study. However, few dissertation titles identify the setting where the research was conducted. Clearly identifying the participants and the research setting is important in establishing expectations for the generalizability of the results. Believing that the research design has controlled for the impact of systematic influence from the setting is an inappropriate assumption. The reader is responsible for judging if the influence of the setting provides a plausible alternative explanation for the findings in the dissertation. Identifying the setting in the dissertation title clearly acknowledges the role of the setting in the research and the importance of the generalizability of the findings.

However, there are circumstances where it is not possible to identify a coherent setting for inclusion in the dissertation title. For example, some data are collected from a wide variety of settings in order to maximize the diversity among participants, as is the case when norms are created for a standardized instrument. Another example where a setting is not involved would be the use of an Internet Web site to collect survey data. It is possible to have a virtual setting for

research that is coherent, such as examining the perceptions or behavior of a group of practitioners participating in distance learning. When a coherent setting can not be identified, any indication of setting would not be included in the dissertation tile and no corresponding section of the introduction or the literature review would address any setting. In this case, however, the section of the dissertation describing the participants would clearly indicate the diversity of options used to collect the data.

Signature Page

The signature page includes those individuals who are required to approve the acceptability of the dissertation in relation to the standards of the university granting the degree. These individuals typically include the major professor, supervisory committee members, and appropriate administrators such as the department chairperson, the dean, or both.

Dedication

The optional dedication most often acknowledges one or two people who have played a major role in the development or success of the doctoral student, typically beyond the completion of the dissertation research e.g. spouse, partner, parents, children, and mentors. The dedication also can identify the individuals who may directly or indirectly benefit from the knowledge created by the dissertation research, e.g. undecided students who need assistance in selecting a program of study or future occupational or educational goal.

Acknowledgements

The optional acknowledgements most often include any combination of the following individuals who have assisted the doctoral student:

- Significant others who have provided support and encouragement,
- The major professor,
- Other faculty, administrators, and students who have provided support and encouragement,
- Supervisory committee members,
- Mentors,
- Persons assisting with data collection, coding, and entry,
- The manager of an organization where data was collected or where archival data was obtained,
- Editors, and
- Statistical Consultants.

Table of Contents

The table of contents should include all of the components of the dissertation, including all five levels of APA headings.

List of Tables

Dissertations almost always include tables that present concepts and numerical data. Summarizing theoretical concepts and numerical data often makes it easier for the reader to understand complex concepts and the magnitude of relationships among data. If tables are not used, or if only one table is used in the dissertation, it is not necessary to include the list of tables.

List of Figures

Figures may or may not be included in the dissertation. The graphic representation of theoretical concepts, processes, and data often make it easier for the reader to understand the content of the dissertation research. If figures are not used, or if only one figure is used in the dissertation, it is not necessary to include the list of figures.

Biography

The biography is a one to two page description of the education, training, and professional experience of the doctoral student, as well as the potential for researcher bias and strategies for minimizing researcher bias. Information on personal characteristics may also be included. The biography provides the reader with contextual information that may be helpful in understanding the perspective taken by the doctoral student in conducting the research. The biography can be an important source of information in evaluating the potential for researcher bias in the research.

The biography for the doctoral student should include the following content:

- Previous and current education and training, including any graduate degree subject specialization and any theoretical or service delivery orientation adopted by the doctoral student.
- Current and previous professional work experience, including specific theoretical perspective or typical interventions used to serve individuals receiving assistance.
- Prior research topics, including the subject matter of any Bachelors or Master's degree research, as well as any additional research completed previously.
- Previous and current professional credentials, including licenses, registrations, and generalist and specialist certifications.

Abstract

The abstract begins with the statement of the problem which is based on the critical analysis of the literature. The abstract continues with the research questions and corresponding hypotheses (if used). Measures operationalizing the variables are identified and the procedures are briefly described. The findings are then briefly presented by the research questions, or by research questions and corresponding hypotheses, and briefly discussed. One or two key implications are also identified. The abstract helps the reader to decide whether or not the dissertation research is relevant enough to his or her own research, instruction, practice, or administrative responsibilities to make it appropriate to read the dissertation in more detail.

CHAPTER 5
THE INTRODUCTION CHAPTER

Chapter 1 provides an overview of the dissertation research. The introduction makes the reader aware of what will be studied, why the study is needed, the questions that will guide the research, and the social significance of the research. After reflecting on the information provided in Chapter 1, the reader should have the information to decide if reading the remainder of the dissertation would be worthwhile. No heading or subheadings are necessary for the first part of the introduction that contains the elements of the literature.

- Any relevant literature located since the preparation of the prospectus must be added to Chapter 1 of the dissertation as appropriate.
- The introduction begins with a brief presentation of the elements of the literature. These elements need to correspond to the research questions posed in the dissertation research. Similar to the title, the elements of the literature are a synthesis of the research questions, or a direct representation of one research question. For example, consider the following research question that will be presented later in Chapter 1:

  What is the contribution of cognitive distortions and negative career thoughts to variability in career indecision (variables) for college students (participants) receiving career counseling at a college career center (setting)?

  This quantitative research question would result in the following elements of the literature that are included in the introduction in Chapter 1 and the review of the literature in Chapter 2

  Cognitive Distortions
  Negative Career Thoughts
  Career Indecision
  College Students
  College Career Centers

  Consider this second research question:

  > What is the effectiveness of cognitive restructuring (*treatment*) on career indecision (*variable*) among college students (*participants*) receiving career counseling at a college career center (*setting*)?

  This quantitative research question would result in the following elements of the literature.

  Cognitive Restructuring
  Career Indecision
  College Students
  College Career Centers

  Finally, consider this research question:

  > What are the Cognitions (variables) of Students with Undeclared Majors who are on Academic Probation (participants) and Enrolled in a Liberal Arts College (setting)?

This qualitative research question would result in the following elements of the literature.

Cognitions
College Students with Undeclared Majors Who Are on Academic Probation
Liberal Arts College

Including all the elements in the research question in the introduction and the review of the literature provides a more comprehensive foundation for the discussion of the findings in Chapter 5. The inclusion of the participants and the setting in the title and the research questions draws attention to the generalizability of the study from the beginning of the dissertation. As stated previously in the section on the title of the dissertation, it is not always possible to identify a coherent setting for the dissertation research, making it inappropriate to include setting in the research questions or as an element of the literature included in the Chapter 1 introduction.

- Begin the presentation of the elements of the literature with a topic sentence for the first element of the literature.
- Each element should be presented in a single paragraph.
- End this section with a paragraph describing the remaining organization of Chapter 1 by APA level 2 headings
- For the "Introduction" section of the ***Dissertation Concept Paper***, include a one paragraph summary for each element of the literature included in the dissertation. No heading or subheadings are needed for the "Introduction" section. Include one to three references for each element of the literature.

Statement of the Problem

The statement of the problem is a succinct statement of the dilemma that the research questions are intended to resolve. This statement reflects the elements of the literature described in the previous section. The statement of the problem should provide a clear rationale for the research questions that follow.

- The statement of the problem is presented in one paragraph and is based upon the critical analysis of the literature section at the end of chapter 2. The statement of the problem is concerned with content gaps in prior research (what has not yet been examined) and problems with the methodology used in prior research (why we can't have confidence in what has been concluded from prior research as a result of poor methodology).
- There are no literature citations in the statement of the problem because relevant key cites have already been provided in the presentation of key elements preceding this paragraph.
- For the Statement of the Problem section of the ***Dissertation Concept Paper***, include a one paragraph description of the problem. No references are necessary for the statement of the problem.

Research Questions

The research questions are the basis for the dissertation research. All methodological aspects of the research are derived from these questions. The research questions are the most important aspect of research and provide the reader with a schema for understanding the design

of the dissertation. Poorly formulated research questions lead to inconsequential research findings.

- Research questions should logically follow from the statement of the problem described in the previous section.
- In addition to narrowing content or methodological gaps in the literature, research questions should be judged in terms of social significance and feasibility.
- The research question, or research questions, should be congruent with the title of the dissertation and the elements of the literature presented in the introduction to Chapter 1 and the review of the literature presented in Chapter 2.
- There are two options for the components of research questions. These are the same two options presented for the title of the dissertation. These options are as follows:
    - Variables, participant characteristics, and setting.

      What is the contribution of cognitive distortions and negative career thoughts to variability in career indecision (variables) for college students (participants) receiving career counseling at a college career center (setting)? The actual research question would read:

      What is the contribution of cognitive distortions and negative career thoughts to variability in career indecision for college students receiving career counseling at a college career center?

      What are the cognitions (*variables*) of students with undeclared majors who are on academic probation (*participants*) and enrolled in a liberal arts college (*setting*)? The actual research question would read:

      What are the cognitions of students with undeclared majors who are on academic probation and enrolled in a liberal arts college?
    - Treatments, variables, participant characteristics, and setting.

      What is the effectiveness of cognitive restructuring (*treatment*) on career indecision (*variable*) among college students (*participants*) receiving career counseling at a college career center (*setting*)? The actual research question would read:

      What is the effectiveness of cognitive restructuring on career indecision among college students receiving career counseling at a college career center?
- Referring back to the section on the title of the dissertation, there is no need to identify a setting as part of the research question if there is no coherent setting for the dissertation research that is likely to influence the findings. Collection of data from participants at a variety of disparate settings or survey research are examples of circumstances where setting would not be indicated in the research question. Refer to the dissertation title section of this book for more information.
- If only one research question is posed, the "*Research Question One*" and "*Research Question Two*" headings would not be used.
- No references are necessary for the presentation of research questions.

- For some dissertation research, only one research question is necessary. The plural form, "research questions" is used in this book for the sake of simplicity and consistency.

Given the statement of the problem, the following research questions[11] are posed:

or

The following research questions are intended to provide tentative answers to the dilemma posed in the statement of the problem:

> What is the contribution of cognitive distortions and negative career thoughts to variability in career indecision for college students receiving career counseling at a college career center?

- In qualitative studies, not all of the research questions are necessarily known at the time the dissertation is initially designed. Additional research questions may emerge during data collection as important new variables are identified.
- Second and third research questions are not posed in this book.
- For the Research Questions section of the ***Dissertation Concept Paper***, state the research question or questions. No references are necessary for the research questions.

Social Significance

The social significance section describes the importance of seeking a solution to the statement of the problem identified previously. The statement of social significance justifies the student and faculty time and financial resources that need to be devoted to the research. A dissertation requires the expenditure of thousands of dollars in direct costs and indirect costs. Examples of direct costs include tuition and faculty salaries. Student loans, text editing, and statistical consulting may also be direct costs. Indirect costs include lost income during graduate study. The anticipated knowledge gained from a student's dissertation research should be clearly worth the cost.

- Given the statement of the problem discussed above, include 2 to 4 paragraphs that explain the significance of the problem for both individuals and the general public. Mention the consequences if the problem is not adequately addressed.
- Where possible, include aggregate data that indicates the extent of the problems that are identified in the statement of the problem.
- Include references for the social significance of the study.

[11] While the example of research in this dissertation guide shows only one research question for the sake of brevity, many dissertations involve more than one research question. As a result, the terminology for research question is plural in this guide.

CHAPTER 6
THE REVIEW OF THE LITERATURE CHAPTER

Chapter 2 of the dissertation provides the reader with a detailed and critical review of the literature that serves as the foundation for the dissertation research. The review of the literature helps the reader to understand the variables that will be examined in the dissertation, as well as providing a justification for the research questions being examined in the dissertation research. The literature review is sequenced in the same order as the elements of the literature that were first presented in the Chapter 1 Introduction. An element of the literature provides either the contextual or the conceptual information necessary to allow the reader to critique the discussion of the findings in Chapter 5.

- As stated in the Introduction Chapter, the elements of the literature, now presented in detail in Chapter 2, need to correspond to the research questions used in the dissertation research.
- Avoid being discipline bound in the literature review, e.g. only citing literature from the fields of family systems, psychology, or social work. Other fields, such as sociology, economics, and philosophy can provide alternate theory and prior research that helps in posing more inclusive and appropriate research questions. Often, true innovation, creativity, and advancement of knowledge results from analyzing the similarities and differences in theory and prior research among disciplines. Another way of stating this point of view is that the margins between disciplines are where the most creative and advancing research are conducted.
- Also, avoid the mistake of believing that older theory and research is no longer valid and should not be included in Chapter 2 due to changes in society, culture, economics, education, social services, technology, etc. Seminal theory and research has much to offer current dissertation research as long as any systematic bias is identified and a more recent citation by the same author is not ignored. Social science is hampered by recycling old ideas as new thinking and then repeating past problems that could have been at least partially anticipated and avoided. Keep the best of past theory and research, reject invalid science, and fill the gaps with well conceived and executed research.
- Chapter 2 should balance a thorough review of past literature with highlighting the theory and research that has contributed the most to current knowledge. To accomplish this balance, only briefly cite relevant but less important theory and past research. The majority of space in Chapter 2 should be devoted to the most important literature. Ultimately, the focus on selected theory and research is defended by students in the prospectus defense.
- Any relevant literature located since the preparation of the prospectus must be added to Chapter 2 of the dissertation as appropriate.
- Begin with one paragraph describing the organization of Chapter 2 by APA level 1 headings. A purpose statement for the section can be added if desired. No heading is needed for this paragraph.

- Each level of heading needs to follow with a short paragraph that identifies the next level of headings that will be used in the text. For Level 1 headings, begin with a paragraph describing the organization of the section by APA level 2 headings. For Level 2 headings, begin with a paragraph describing the organization of the section by APA level 3 headings. For Level 3 headings, begin with a paragraph describing the organization of the section by APA level 4 headings. No headings are needed for paragraphs describing the organization of a section of the literature review.

Critical Analysis of the Literature

The critical analysis of the literature describes content gaps in prior research (what has not yet been examined that needs investigation) and problems with the methodology used in prior research (why it is not possible to have confidence in what has been concluded from prior substantially flawed research). The critical analysis of the literature (gap in content and methodology) is placed prior to the research questions.

- Include only key references for the critical analysis of the literature.

Research Questions

The research questions first posed in Chapter 1 are repeated here to show how the dissertation research follows directly from the critical analysis of the literature. It is not expected that the dissertation research questions will fill all of the gaps indicated in the critical analysis of the literature. Important unexamined research questions stemming from the critical analysis of the literature should be included in the suggestions for future research presented in Chapter 5 of the dissertation.

- No references are necessary for the research questions.

Operational Definition of Terms

The Operational Definition of Terms section defines key concepts from the research questions. Having operational terms consistently defined in the dissertation helps the reader better understand the research questions, as well as reducing the chances of the reader misinterpreting the findings of the dissertation research.

While operational definitions are presented at the end of corresponding literature review sections, the definitions are repeated here in order to help the reader better understand what the researcher means by the variables, treatments, participants, and setting for data collection included in the research questions. Presenting terms within the context of the literature and adjacent to the research questions helps the reader understand what the researcher actually means by his or her research questions.

- Most often, the operationally defined terms are variables, treatments, participant characteristics, and research setting that are first introduced in the elements of the literature section presented at the beginning of Chapter 1.
- All variables need to be included in the definition of terms.
- Three options exist for the operational definition of a term: a) a unique synthesis of concepts from the literature created by the doctoral student, b) a direct quote referenced from a prior publication, or c) a paraphrase of text referenced from a prior publication.

- The terms associated with these elements are operationally defined in two places in the Chapter 2 literature review.
    - Key concepts in the literature are often defined differently by various authors over time. After examining the differing perspectives that exist, an operational definition of a concept is created or selected by the doctoral student and introduced with a statement such as, “For the purposes of this research/study/investigation/dissertation, _____ will be defined as…” (Reference as needed). Presenting the operational definition immediately following the review of the literature for the term helps the reader judge the appropriateness of the definition in view of past theory, research, and practice.
    - Operational definitions are then repeated as a group directly after the research questions at the end of Chapter 2. Presenting these definitions adjacent to the research questions make it easier for the reader to understand the concepts that make up the research questions, as well as keeping the reader from moving back and forth through the dissertation to find needed information.
- If at all possible, operational definitions should not be longer than one sentence.
- The presentation order of the defined terms should follow the order of terms in the research questions.

CHAPTER 7
THE METHODOLOGY CHAPTER

Chapter 3 of the dissertation provides the reader with a detailed description of the components of the methodology that will be used in the research. This chapter helps the reader to judge if the methodology used in the research provided an adequate opportunity to examine the research questions and hypotheses. The chapter also helps other researchers to replicate the dissertation or to design similar studies.

- Begin with a paragraph describing the organization of Chapter 3 by APA level 1 headings. No heading is needed for this paragraph.

- The future tense used in Chapters 1 and 3 of the prospectus is now changed to past tense for the dissertation.

- Any relevant literature located since the preparation of the prospectus must be added to Chapter 3 of the dissertation as appropriate.

- Methodological limitations of prior research may help in designing the methodology for the dissertation.

Hypotheses *[Quantitative research]*

The hypotheses section of the methodology chapter describes the nature of specific differences or relationships among variables that will be tested in the dissertation research. Hypotheses are based on research questions which are in turn based on the critical analysis of the theory and previous research presented in Chapter 2. This section helps the reader decide if the hypotheses are relevant to the research questions. This section also provides a schema for understanding the research design, variables, measures, participants, and data analyses that are used in the dissertation research.

- Some dissertation research, such as qualitative research, does not use hypotheses. In this case, this section is eliminated. Begin the research design section by simply restating the research questions to help the reader to better associate the research questions with the research design.
- Hypotheses are stated in either null or directional (research) form, but not both.
    - A null hypothesis assumes that there are no differences among variables. Any significant difference that is found among participant groups can be in either direction, e.g. group 1 can have higher scores than group 2 and vice versa, or any significant relationship among variables can be positively (directly) or negatively correlated, e.g. variable 1 can be positively (directly) or negatively correlated with variable 2.
    - A directional hypothesis assumes that any significant difference among variables and participant groups is in a specific direction based upon the theory or prior research identified in the critical analysis of the literature in Chapter 2. A specific and significant difference among participant groups will exist, e.g. group 1 will have

higher scores than group 2 or vice versa. A specific and significant relationship among variables will be positively (directly) or negatively correlated, e.g. variable 1 will be positively (directly) correlated with variable 2.

- All data analyses are guided directly by the hypotheses. For example, the use of an ANCOVA requires that the hypothesis state that groups 1 and 2 will have a significantly higher score on measure 1 than the control group, given that variable 1 is held constant for all groups.
- No references are necessary for the hypotheses.
- Begin the Hypotheses section by restating the research questions to help the reader to associate one or more hypotheses to a specific research question. Presenting research questions adjacent to hypotheses also makes it easier for the reader to judge whether or not the hypotheses are relevant to the research questions that are being examined in the dissertation.
- Add other research questions and hypotheses as needed, using the following text: "This study also addressed the research question, [restate the second research question]." "The following hypotheses were used to provide data for answering this research question." [List each hypothesis for the second research question.]
- For the Hypotheses section of the ***Dissertation Concept Paper,*** list each hypothesis for the proposed study. No references are necessary for the hypotheses.

Research Design

The research design section of the methodology chapter indicates how the hypotheses described in the previous section will be examined. Describing the research design allows the reader to judge the extent to which using the design would adequately answer the research questions.

- Reference the selected research design and potential threats to validity.
- For quantitative, qualitative, and mixed methods research designs, include an explanation of the extent to which the design controls for threats to the quality of the research.
- For the Research Design section of the ***Dissertation Concept Paper***, include a one paragraph description. Include a reference for the research design.

Variables

Research questions, hypotheses, the research design, and the measures all identify the variables that are included in the dissertation research. The variables section of the methodology chapter provides a succinct explanation of the variables that were introduced as elements of the literature at the beginning of Chapter 1 and examined in detail in sections of Chapter 2. The description of a variable needs to match the corresponding definition in the definition of terms section of Chapter 2. Succinctly describing the variables helps the reader judge whether or not the variables are relevant to the measures. Describing the variables also provides an advance organizer for understanding the constructs included in the measures described in the following section.

Variables are operationalized in the measures. In quantitative research, variables can be measured by an instrument with several scales, with one variable operationalized by one scale. In qualitative research, variables can be measured by focus group questions, with one variable operationalized by one focus group question.

In qualitative research, all of the variables of interest may not be specified at the outset of the study. For example, as a result of the data collected in action research, it may become clear that a new variable exists and warrants examination. As new variables are identified, additional measures may be required to examine the variable. In qualitative research, the quality and relevance of the knowledge gained often requires a recursive, or iterative, research process.

A problem sometimes occurs in social science research when a measure selected to test a hypothesis is well respected and commonly used in research on a particular topic area. These popular measures are often appropriately standardized, reliable, and valid for a particular use with a specific population. However, a dilemma occurs when the scale construct in the measure does not adequately match the construct of the variable. Not all research questions and hypotheses can be examined because no well-standardized, reliable, and valid measure exists for the variable. The lack of significant findings in a dissertation may well result from variable-measure incongruence as opposed to an actual lack of differences or relationships.

- Begin with one paragraph describing the organization of the variables section by APA level 2 headings. A purpose statement for the section can be added if desired. No heading is needed for this paragraph.
- Explain each variable in the same order as presented in the research questions.
- Provide only key references for each variable since a more detailed examination of variables has been included in Chapter 2.
- For the Variables section of the ***Dissertation Concept Paper***, include a one paragraph description for each variable and include key references for each variable.

Measures

Measures are used to assess the performance of variables that are included in research questions and hypotheses. The types of measures typically used in quantitative research include the following:

- Instruments
- Tests
- Questionnaires using predominantly fixed response items
- Interviews using predominately fixed response questions
- Ratings of written, visual, auditory, or tactile exercises using predominately predetermined variables
- Unobtrusive observations
- Analysis of archival data

The types of measures typically used in qualitative research include the following:

- Questionnaires using predominately open-ended items
- Interviews using structured, partially structured, or unstructured questions
- Focus groups
- Ratings of written, visual, auditory, or tactile exercises without using predominately predetermined concepts
- Observations using unobtrusive or participant observations
- Documents or computer files of written, visual, or auditory data using participant journals, institutional records, public relations materials, etc.

The measures section of the methodology chapter describes the design and performance of the measures that are used in the dissertation research. Reviewing these descriptions helps the reader judge whether or not the measures are relevant to the variables, as well as judging whether or not the measures have evidence of an acceptable lack of potential bias while having acceptable evidence of standardization, reliability, and validity. This evidence can help the reader be more confident in the results that were obtained and more confident that the research questions have been adequately examined.

The selection of measures for specific variables should be made on the basis of correspondence and quality. Correspondence is concerned with the extent to which the measure approximates the variable. While quality is most often described in terms of reliability and validity, quality is a more multidimensional concept that also includes potential bias for various populations, and standardization. A quality measure reduces the likelihood that characteristics other than variable being examined results in alternative explanations for the findings, e.g. low reliability results in a type II error where a negative correlation very likely exists that is not identified by a statistical test in quantitative research or researcher bias leads to predetermined findings in qualitative research. The "Standards for Educational and Psychological Testing" (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999) is the benchmark for considering the quality of educational and psychological measures used in dissertation research.

- Begin with one paragraph describing the organization of the measures section by APA level 2 headings. A purpose statement for the section can be added if desired. No heading is needed for this paragraph.
- Explain each measure in the same order as the variables are described in the previous section (the same order as in the research questions).
- Several sources exist for obtaining evidence of the quality of a measure. First, obtain editions of the professional manual for the measure. Second, if possible, obtain additional research conducted by the author(s) of the measure that is not available in the manual. Third, obtain other studies providing evidence of quality that are reported in the literature.
- Some measures have only partial evidence of the quality of the measure. When evidence is not available that a measure lacks potential bias, has adequate and representative norm

groups, or valid beyond content validity, a notation needs to be made in the delimitations section in chapter 3.

- Some dissertations involve the creation of a new measure by the doctoral student when an existing measure of a variable in the research question is unavailable. In this case, the correspondence of the measure to the research question outweighs the minimal amount data available on the quality of the measure. The minimal amount of data on the quality of the measure needs to be mentioned in the delimitations section of the dissertation.
- Include references as appropriate.

Begin the introduction with a sentence describing the organization of the section by APA level 3 headings. No heading is needed for this paragraph.

Statement of Purpose

State the purpose, or purposes, of the measure being used. Include a description of the extent and nature of the use of the measure in prior research

Development of the Measure

Describe the development of the measure. For example, include a description of any conceptual or theoretical that was used in the creation of the measure. Also, if several versions of the measure exist, describe how the number of items of was reduced to create the shortened version used in the dissertation research.

Scales and Subscales [Quantitative research]

Describe all scales and subscales for any instruments and tests that are used in the dissertation research.

Potential Bias in the Measures

The capacity of instrument, test, or questionnaire items to adequately measure constructs for the intended norm groups can be compromised because of potential measurement bias. Construct-irrelevant aspects of test scores can compromise test scores for specific groups of individuals. Document the evidence showing that the procedures used for creating items and instructions for instruments, tests, and questionnaires did not result in appreciable positive or negative bias with respect to age, disability, ethnicity, gender, immigration status, nationality, occupation, physical characteristics, poverty level, race, religion, sexual orientation, and social class. One method for evaluating potential bias involves using a panel of expert practitioners to identify potential bias in individual items. Proving information on potential bias helps the reader judge whether or not differences among participant groups in the research are a result of actual differences or biased items.

Standardization [Quantitative research]

Standardization is concerned with the extent to which the norm groups for an instrument or test are appropriate for the populations for which the instrument or test was designed. Document the evidence that the norm groups are adequate enough to represent the intended populations for the instrument or test. Standardization evidence helps the reader determine if the

norm groups for the measure are appropriate for generalizing the findings of the dissertation research to the intended populations.

Adequacy of Normative Groups

Provide evidence that the norm groups for the measure are large enough to minimize sampling error in order to be reasonably sure that the mean of each norm group reflects the mean of the populations they represent, and are large enough to be reasonably sure that the norms are distributed in the same manner as the population. The norm groups also need to be large enough to provide adequate power for subsequent statistical analyses, such as factor analytic studies used in the development and validation of the measure. Having an adequate size norm group provides greater confidence that the means of the norm groups represent the mean of the population and that the scores are distributed in the same manner as the population.

Representativeness of Normative Groups

Document the evidence that the norm groups for the measure are representative of the population with respect to variables such as age, gender, major racial/ethnic groups, and other characteristics. The norm groups for the measure also need to be representative of geographic regions for the population for the dissertation research.

Reliability [Quantitative research]

Reliability is concerned with the extent to which a measure is consistent and stable in measuring what it is intended to measure. Evidence of the reliability of a measure helps the reader determine the likelihood that differences or relationships among variables actually exist, as opposed to being an artefact of the unreliability of the measure.

- Document the evidence that an instrument or test demonstrates adequate internal consistency, e.g. coefficient alpha or split-half, for each scale of the instrument or test used in the dissertation research. Also, provide evidence of test-retest (temporal) reliability for each scale of the instrument or test. Include reliability evidence only for norm groups that are relevant to the research questions posed in the dissertation research.
- Provide evidence that reliability of instruments, tests, and expert-rater judgement used with exercises or observations, including the inter-rater reliability of judgments from previous research that is similar to the current dissertation research.
- Document the internal consistency for all scales used in the dissertation research and the inter-rater reliability for all measures using expert ratings of journaling or written, visual, auditory, or tactile exercises, and observations presented in the findings in Chapter 4.

Validity [Quantitative research]

Validity is concerned with the accumulation of evidence about the extent to which an instrument or test actually measures what it is intended to measure. Evidence of the validity of an instrument or test helps the reader determine the likelihood that differences or relationships among variables actually exist, as opposed to being an artifact of inherent error in the measure. Evidence needs to be provided for face, content, and construct validity. Construct validity is the aggregated evidence from factorial, convergent, discriminant, and criterion validity analyses. Measures obviously vary in terms of the amount and type of validity evidence that is available. A

measure can still have adequate evidence of validity and not include all of the validity sources identified previously.

Like hypotheses that can never be proven to be absolutely true, validity can never be absolutely established. The critical question is, "How much validity evidence is enough?" The answer is that this is a judgment call, first on the part of the researcher and second on the part of the reader. For example, the adequate validity criterion for measures used in exploratory research that are designed to guide future research can be relatively lower, whereas the adequate validity criterion for research on "high-stakes" assessment of professional competency needs to be extensive because of the potential harm resulting from poor decisions that are made on the basis of research data.

Measures are not valid in a general sense. Measures are only valid for specific uses (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999). The appropriate way to make conclusions about validity is as follows: "Evidence suggests the _____ (measure) is valid for _____ (use) with _____ (population)."

Face validity

Document the evidence that individuals perceive that an instrument, test, questionnaire, or observation appears to measure what they are told (or read) it is intended to measure. Evidence for face validity can be obtained through individual interviews and focus groups typically conducted as part of the development of the measure. Examining face validity is important because it is useful to know the typical reaction that individuals have to an instrument, test, or questionnaire. If the individual believes that the instrument, test, or questionnaire does measure what it is intended to measure, then the individual may be more motivated to complete the measure. A measure does not necessarily need to have face validity

Content validity

Provide evidence that the content of the measure is congruent with the conceptual or theoretical basis of the instrument, test, questionnaire, structured interview, semi-structured interview, focus group, journal, written, visual, auditory, or tactile exercise, or observation. Evidence for content validity is most likely contained in the documentation of the development of the measure.

Construct validity

Construct validity is concerned with the congruence between what an instrument or test actually measures and what it is designed to measure. As stated previously, evidence of construct validity is the sum total of the evidence derived from studies of factorial, convergent, divergent, and criterion validity studies.

Factorial validity

Document the evidence that clusters of empirically associated items can be identified and reproduced across norm groups in a manner that is consistent with the conceptual or theoretical basis of the measure. Initial evidence for factorial validity is most likely contained in the professional manual for of the measure.

Convergent validity

Provide evidence that the total, content, or factor-derived scale scores of the measure are associated with other measures of similar, or somewhat similar, constructs in a theoretically consistent direction, e.g. either a direct or negative correlation. Convergent validity is concerned with evidence supporting a hypothesized relationship between content or factor-derived scale scores of the measure and other measures of the construct.

Discriminant validity

Document the evidence that the total or content or factor-derived scale scores of the measure are not associated with measures of dissimilar constructs in a theoretically consistent direction. Evidence of discriminant validity can further define the meaning of a scale by identifying important concepts that are not relevant to understanding a scale score. (Note: discriminant validity is sometimes referred to as divergent validity.)

Criterion validity

Provide evidence that exists of the extent to which the total score or content or factor-derived scale scores of the measure accurately discriminate between groups of people. This type of validity evidence can make important contributions to an interpretation by relating the specific characteristics of a group of individuals with particular scale scores.

Summary of Evidence of the Appropriateness of the Measure [Quantitative]

Provide a brief one-paragraph summary indicating that the measure has evidence of an acceptable lack of potential bias while having evidence of acceptable standardization, reliability, and validity. This summary helps the reader to make a final judgment as to the appropriateness of the measure for the variables identified in the research question.

Transparency [Qualitative Research]

Transparency is concerned with evidence that the doctoral student is reasonably aware of, and sensitive to, potential positive and negative bias that can inappropriately influence the findings. Personal insights gained from interactions with mentors, supervisors, counselors, parents, and friends may enhance sensitivity to potential bias in conducting dissertation research. The availability of information on potential bias helps the reader judge whether or not participants' perceptions in the research are a result of actual perceptions or the biased beliefs of the researcher. Evidence of transparency is demonstrated by the doctoral student's ability to describe their perceptions about the content and process of measurement, as stated in the measures section of the dissertation. Since the content and process of measurement often evolve during data collection, additional perceptions of the doctoral student about the content and process of measurement need to be documented in the procedures section of the dissertation. An example of evolution in measurement would be changes in, or additions to interview questions, based on the prior responses of the participants. The following evidence is needed to document transparency:

- Document the evidence that the researcher is reasonably aware that positive or negative bias related to relevant personal characteristics such as age, disability, ethnicity, gender, immigration status, nationality, occupation, physical characteristics, poverty level, race, religion, sexual orientation, and social class can have a negative influence on the development of questionnaires, interviews, and focus group questions, journaling

instructions, written, visual, auditory, or tactile exercise instructions, or instructions for trained raters of exercises or raters of observed behavior.

- Provide evidence that the researcher is reasonably aware that potential positive or negative bias toward various groups of individuals may inappropriately influence the findings, the discussion of the findings, and the implications of the findings.
- Document the evidence that a panel of expert practitioners were used to identify potential bias in the measures or the text of the dissertation.

Coherency [Qualitative research]

Coherency is concerned with the accumulation of evidence that multiple data sources and multiple measures corroborate the findings of the dissertation research. This information helps the reader judge whether or not the findings are idiosyncratic to the perceptions or behavior of a single research participant or idiosyncratic to the perceptions of a single researcher, as opposed to obtaining similar findings from multiple participants and researchers. The following evidence helps to document coherency:

- Document the evidence that multiple participants, such as more than one case study, were used to obtain the data analyzed in the dissertation.
- Document the evidence that multiple researchers using a similar method (interviews) were used to collect data analyzed in the study. Also, document that the researchers provided reasonably similar ratings of exercises and behaviors. The documentation of similarity in rating is irrelevant when purposeful sampling is used to identify participants with substantially varying characteristics and environmental context.
- Document the evidence that multiple types of measures (questionnaires, interviews, and focus groups) were used to obtain the data analyzed in the dissertation.

Credibility [Qualitative Research]

Credibility is concerned with the accumulation of evidence that the measures, the findings, and the discussion of the findings provide a relatively accurate answer to research questions posed in the dissertation, while limiting other alternative explanations for the results. This information helps the reader judge whether or not to trust the findings, the discussion of the findings, and the implications of the findings. Specifically, credibility is the aggregated evidence from relevancy, plausibility, and competency.

Relevancy

Document the evidence that questionnaire items, interview questions, focus group questions, and observation rating forms used in the dissertation are congruent with relevant elements of the available professional literature. Relevancy is similar to content validity in quantitative research.

Plausibility

Provide evidence that the findings, discussion of the findings, and the implications of the findings follow logically from the raw data. Plausibility is similar to face validity in quantitative research. The following evidence is need to document plausibility:

- Where possible, document evidence that the participants in the research concur that the findings and the discussion of the findings are a correct reflection of their actual perceptions.
- Provide evidence that external auditors concur that the analysis of the data, the findings, the discussion of the findings, and the implications of the findings are congruent with the raw data provided by the participants.

Competency

Competency of the researchers is concerned with the accumulation of evidence that the doctoral student, and any other researchers contributing to the dissertation, have the ability to conduct qualitative research in an effective manner. Competency extends to other individuals involved in the research in addition to the doctoral student. Additional individuals include other researchers who are collecting data, as well as other researchers who audit the findings, the discussion of the findings, and the implications of the findings. Specifically, competency of the researchers is concerned with documenting the following evidence:

- Provide evidence that the doctoral student has enough experience with the environment (or context) of the dissertation research to be able to formulate relevant questionnaires, interview questions, and focus group questions.
- Document evidence that the doctoral student has qualitative research training from courses or independent study, as well as the experience gained from participating in previous qualitative research, to be able to design and effectively execute qualitative dissertation research.
- Provide evidence that the doctoral student has the necessary training in interpersonal communication to develop good rapport with the participants who provide data in the study. Establishing an empathic, accepting, and collaborative relationship increases the chances that the participants will be truthful and appropriately self-disclosing in individual interviews and in focus groups.
- Document evidence that other researchers involved in collecting data using interviews, focus groups, observations have adequate training and experience to collect data that accurately reflects the perceptions or behavior of the participants. The specific training of other researchers involved in the data collection for the dissertation is included in the procedures section of the Methodology chapter.
- Provide evidence that the doctoral student, and other researchers if they participate in the study, had the opportunity to practice with data collection prior to actually collecting data.
- Document evidence that other researchers involved in rating journals or written, visual, auditory, or tactile exercises have the training and experience to accurately record participant perceptions or behaviors.
- Provide evidence that the training and experience of others researchers serving as external auditors is adequate to verify the plausibility of the analysis of the data, the findings, the discussion of the findings, and the implications of the findings.

- Document evidence that the researchers received training in data collection and had an opportunity to practice collecting the data. Additional evidence can be provided that the researchers reached a predetermined minimum level of similar competence in data collection.

Summary of Evidence of the Appropriateness of the Measure [Qualitative Research]

Provide a brief one-paragraph summary of the evidence that the measure has acceptable evidence of transparency, coherence, and credibility. This summary helps the reader to make a final judgment as to the appropriateness of the measure for the variables identified in the research question.

- For the Measures section of the ***Dissertation Concept Paper***, include one a paragraph description for each measure. Include references for the measures.

Treatment

When a quantitative experimental research design is used to answer a research question, add a treatment section to the methodology chapter. The treatment section describes the experiences of the participants in the treatment group(s) and the control group. For qualitative research designs, this section can be titled "Intervention" since the term "Treatment" is so closely identified with quantitative experimental research designs.

- "Treatment" refers to the use of techniques, resources, and events that are intended to have an impact on one or more variables included in the research design.
    - "Techniques" refer to an intervention provided for an individual, or group of individuals, that is based upon theory, evidence-based practice, or tradition. The technique should only be delivered by a practitioner with appropriate training and experience. Examples of techniques that could be used as a treatment include cognitive restructuring and positive reinforcement.
    - "Resources" refer to print, multimedia, and Web-based assessments, information, or instruction designed to achieve a predetermined learning outcome. The only resources that should be used as a treatment are those print, multimedia, and Web-based resources that are appropriately valid and free of bias. Examples of resources include psychological assessments and information.
    - "Events" refer to participation in an experience that is designed to impact a measured variable. Examples of events include a mock employment interview and completing a physical exercise program.
- In addition to describing the techniques, resources, or events, identify the sequence of treatments if more than one type of treatment is used.
- Techniques, resources, and events can be used individually or in combination as a treatment. If techniques, resources, and events are used in combination, it is not possible to determine which of the treatments contributed, or did not contribute, to any impact on the variables.
- A description of the treatment should be included in the review of the literature in Chapter 2 of the dissertation. The description should include any theoretical basis or any

evidence-based practice associated with specific techniques, resources, and events that are described.

- In quantitative studies, researcher bias is less problematic if the researcher does not directly participate in presenting the treatment. In qualitative research, the direct participation of the researcher in delivering the treatment is more acceptable. Risking experimenter bias in qualitative research is acceptable as long as enough information is provided in the dissertation for the reader to make an informed judgment about the potential for researcher bias.
- The control group isolates the impact of the treatment group on the variables being measured. When describing the control group, pay particular attention to the similarity of the control and treatment groups, with the exception of the critical element that is hypothesized to impact the variable(s).Consider the experimental design research question presented earlier.

  > What is the effectiveness of cognitive restructuring (*treatment*) on career indecision (*variable*) among college students (*participants*) receiving career counseling at a college career center (*setting*)?

  The control group has the same experiences as the treatment group(s) with the exception that the control group participants do not experience the cognitive restructuring intervention. A good design for this research question would have the participants in the control group receive an experience that is similar to the treatment group in terms of cognitive complexity and duration. The control group participants would learn a similar cognitive skill, such as reading a paragraph and identifying facts that support or refute an argument.
- For the Treatment section of the ***Dissertation Concept Paper***, include a one paragraph description of the treatment groups and the control group. No references are necessary in the dissertation concept paper for the description of the participants.

Participants

The participants section of the methodology chapter describes the sampling procedures, the population, design, and performance of the measures that are used in the dissertation research. The participant or participants are individuals who will provide the data that will be analyzed to answer research questions and test hypotheses.

- In the example used in this book, the participants would be college freshmen, sophomores, juniors, seniors, and graduate students seeking services from one of five college career centers.
- For the Participants section of the ***Dissertation Concept Paper***, include a one paragraph description of the participants. Include one sentence that describes the sampling method that will be used and one sentence that indicates the population to whom the participants will generalize. No references are necessary in the dissertation concept paper for the description of the participants.

Sampling

The sampling section describes the method of selecting participants who are involved in the dissertation research, or the method of selecting a single participant. The purpose of this section is to allow the reader to evaluate whether or not the sampling method appropriately identifies an individual or individuals who are representative of the population identified in the research question.

- Describe and reference the specific sampling technique that will be used in the data collection.
- Briefly describe the context of data collection from participants in terms of the nature of the organization where the data were collected, as this context may potentially influence on the findings.
- For quantitative research, describe the calculation of power necessary for determining the number of participants needed for the hypotheses being tested. The author of the technique used to determine power needs to be identified and included in the references.
- A quantitative example of sampling could be a stratified random sample of college students from five geographically distributed institutions by class, e.g. freshmen, sophomores, juniors, seniors, and graduate student from colleges in the southeast, northeast, midwest, northwest, and southwest.
- A qualitative example of sampling would be purposeful sampling that provides in-depth data from potentially information-rich participants, e.g. a freshman, sophomore, and junior in college who participate in three case studies investigating the potential influence of counseling on the coping skills of students who were victims of a violent crime.

Population [Quantitative research]

The population is the group of individuals to which the findings, discussion of the findings, and the implications of the research are to be generalized. The purpose of this section is to clarify the characteristics of a group of individuals who may eventually benefit, either directly or indirectly, from the knowledge gained from this dissertation research.

- When available, include census or other valid aggregate data in describing the population. Archival data are important in comparing the similarity of the characteristics of the population and the participants.
- Include references as appropriate.
- In the example used in this book, the population would be college students seeking services from a college career center.

Characteristics of the Participants

The characteristics of the participants section present an analysis of aggregate data either from multiple individuals or a presentation of data from one individual. The purpose of this section is to allow the reader to evaluate whether or not the participants actually reflect the characteristics of the population.

- Analyze and report the findings from the analyses of participants' demographic data, as well as the analysis of any construct that is used to more completely describe the participants, but is not used as a variable in the dissertation, e.g. career decidedness. Comment on the extent to which the demographic characteristics of the participants are congruent with any aggregate data available for the population. Also, report any analysis of demographic data that is used to determine the potential equivalence of treatment and control groups.
- Participant demographic forms should include descriptors that relate to the types of participants typically included in other studies. The availability of similar data facilitates comparison of results with prior research.
- Include references as appropriate.

Data Analysis

Data analysis techniques are used to answer the research questions or to test the hypotheses that are derived from the research questions. Using valid data analysis techniques is critical in conducting valid research. Data analysis validity is concerned with providing evidence that the analytical techniques used in the research can actually answer the research questions being asked or the hypotheses being examined. It is as important to establish data analysis validity as it is to establish the validity of the measures used in a research study. A good research question that is poorly analyzed is as bad as asking an inappropriate research question. There are two elements of data analysis validity: congruence and accuracy.

- *Congruence* involves providing a rationale that shows how the data analysis method for both quantitative and qualitative research fits the questions being asked or the hypotheses being examined. Description of the rationale for using various data analysis methods helps the reader determine if the analytical techniques are appropriate for the research design and the measures used to represent the variables in the dissertation.
    - For quantitative research, provide a rationale for the p level for all statistical tests of hypotheses. Selecting $p < .05$ on the basis of tradition is not an acceptable decision. In some exploratory studies, $p < .10$ may be appropriate, while other research involving potentially harmful interventions would require $p < .001$.
- *Accuracy* involves providing evidence that the analytical techniques used in the research provide correct answers to the research questions being asked or the hypotheses being posed. Establishing the accuracy of data analysis helps the reader to judge weather or not the findings obtained in the dissertation can be trusted.
    - In quantitative research, establishing accuracy involves providing evidence that the calculations in the statistical analyses produce correct results. For well established data analysis software, such as SPSS, the quality control provided by the editors is assumed to include verification of the accuracy of the results obtained. However, some newer analytical techniques use unpublished software that is not well established. In addition to referencing authorship of the statistical software, evidence attesting to the accuracy of the software needs to be referenced. Another aspect of accuracy involves describing the extent to which the data collected by the researcher

meets the assumptions of the statistical test that has been selected to test any hypothesis.

- In qualitative research, establishing accuracy involves providing evidence that the data reduction and analytical techniques used are correct. Providing this type evidence is necessary when either a software package or the efforts of the researcher are used to arrive at the findings. There are at least two sources of data that can provide the necessary evidence in qualitative research. For example, a reference can be cited attesting to the accuracy of content analysis software. Also, independent verification of the accuracy of data reduction from interview transcripts and analysis of the data can be provided by another qualified qualitative researcher.

- Begin with one paragraph describing the organization of the data analysis section by APA level 2 headings. A purpose statement for the section can be added if desired. No heading is needed for this paragraph.

Research Questions and Hypotheses

- Presentation of the data analysis should be organized by research question or research question and hypothesis as appropriate. The following example includes one research question and eight hypotheses. If one additional research question with two hypotheses were used, the level two headings would be "Research Question One," "Hypothesis One," through "Hypothesis Eight" followed by "Research Question Two," "Hypothesis Nine," and "Hypothesis Ten." When similar data analyses are completed on multiple hypotheses for one research question, as is the case below, a description of the data analysis should be placed after the last of the similar hypotheses.
- If no hypotheses were used in the dissertation research, describe the data analysis techniques that were used for answering each research question.
- Describe the data analysis techniques that were used to test similar hypotheses, in this case, hypotheses one through seven that are described in this book.
- In the example used in this book, the first seven hypotheses would be examined using a multiple regression analysis.
- Again, in the example used in this book, describe the different data analysis techniques that were used to test the next hypothesis, in this case, hypothesis eight.
- In the example used in this book, the eighth hypothesis would be examined using a correlation coefficient.
- Since multiple research questions and hypotheses may use the same analytical technique, conclude the data analysis section with a subsection entitled, *"Data Analysis Validity"* that addresses the congruence and accuracy of the data analyses.

Data Analysis Validity

- Provide evidence of congruence by showing how data analysis methods fit the questions being asked or the hypotheses being examined in the dissertation.

- Identify any computer software (such as SPSS or NVivo) that will be used in data analysis. If the software is not well established, present appropriate evidence of the accuracy of the analytical techniques used in the dissertation.
- For the Data Analysis section of the ***Dissertation Concept Paper***, include one paragraph to describe the proposed data analysis for each hypothesis. Similar hypotheses can be grouped together in one data analysis paragraph.

Delimitations

Delimitations are anticipated constraints in the interpretation of the findings of the dissertation research whereas limitations are unanticipated constraints in data interpretation. Delimitations indicate the boundaries associated with the methods of the dissertation. For example, the restrictions associated with quasi-experimental research designs in terms of the lack of random assignment to groups are known before the data are collected. While research questions indicate the scope of the dissertation, the delimitations clarify what will not be examined. The delimitations help to shape the readers' expectations for the dissertation research. The delimitations also help readers judge whether or not the discussion of the findings is limited to the actual scope of the dissertation research. For example, using volunteers who may have different motivations or characteristics than non-volunteers. This delimitation constrains the generalizability of the findings. This delimitation constrains the plausibility of the findings.

- One constraint in interpreting the findings of dissertation research is inherent in the design of the study, typically expressed as threats to internal and external validity in quantitative designs and threats to credibility in qualitative designs.
- Another constraint in interpreting the findings involves the measures used in the dissertation research.
    - Few measures have extensive evidence of quality. This occurs because either the research has not been conducted to provide the evidence or the research has been conducted but is not available. As a result, the measures used in the dissertation research may not have all of the bias, standardization, reliability, and validity evidence that are necessary.
    - The selection of a measure for a specific variable may require a compromise between correspondence and quality, e.g. one measure may be an excellent fit with the theoretical construct for a variable but not have the evidence of quality that exists for another measure that is less theoretically relevant to the variable. Using a marginally acceptably measure limits the scope of the research in terms of the degree of confidence the reader has in the discussion of the findings.
- Addressing the delimitations in the implications for future research section allows future researchers to design studies that answer questions that were not possible with the methodology used in the current dissertation research.
- Reference this section as appropriate.

Procedures

The procedures are a step-by-step description of the resources and actions taken to collect the data that was analyzed according to the plan described in the data analysis section. Having an understanding of the procedures helps the reader judge if the research design was appropriately executed and led to findings that successfully answered the research questions. The description of procedures also assists researchers who are interested in replicating or extending the dissertation research. Provide a reasonably detailed description of the sequential steps in preparing for data collection, collecting the data, and follow-up after data collection. Include a description of all the resources used in the data collection process.

- Successfully identifying and executing the details embodied in the procedures is crucial in conducting valid dissertation research. A research question, however brilliant, can be easily compromised and much time and money lost if adequate attention is not paid to the procedures for the dissertation research.

Procedures Prior to Data Collection

- Sequential steps in preparing for data collection include:
    - Negotiate data collection permission with appropriate organizations. Options for data collection would include permission to contact potential participants and access to archival data such as academic performance from institutional records.
    - Select the source, or sources, of archival data and obtain permission for using the data if such permission is required.
    - Arrange for a secure physical or virtual (Internet-based) location for storing data collected from the participants.
    - Prepare any participant demographic data collection forms that are needed.
    - Prepare the informed consent form that is included as part of the Institutional Review Board (human subjects) application.
    - Establish the similarity of the inter-rater reliability of expert ratings for exercises, observations, or documents as part of the dissertation data analysis that is reported in the Findings in Chapter 4. [Qualitative]
    - As stated in the measures section, the content and process of measurement can evolve during data collection. As a result, perceptions of the doctoral student as measurement occurs needs to be documented in this section.
    - Have all of the researchers involved in the study practice the data collection prior to conducting the pilot study.
    - Determine the appropriateness of including copyrighted materials in the dissertation. Copyrighted resources, such as measures, can not be included in the dissertation without permission from the copyright holder, as this would be a violation of copyright law. The copyright holder is typically the author, publisher, or the author's representative if the author is not available to give permission.
        - Some measures are included in journal articles that are copyrighted by the journal publisher. Although these measures do not have a separate copyright, permission

to use the measure should still be obtained from the publisher. Some publishers will also require the user to obtain permission from the author since measures published in journals are only designed for research purposes by qualified researchers.

- Some measures, while not copyrighted, are considered limited-use research measures that can be ethically used only by qualified researchers. In this case, written permission from the author, or author's representative if the author is not available to give permission, is needed to use the measure.
- Permission letters for the use of copyrighted resources should be included in the Appendices.
- Check with the copyright office in the university library if any questions remain about the requirements related to copyrighted resources.

- Determine the need for alternating the presentation order of measures, such as tests, when multiple measures are being used in order to minimize any ordering effect where responding to the first measure has a systematic impact on the nature of responses to subsequent measures.
- Prepare any scripts for instructions regarding informed consent, data collection, or participant debriefing.
- Prepare any rating forms and training resources needed for raters and then train the raters. Trained raters are used in providing data for exercises and observations.
- Locate and prepare any resources that are needed in delivering any treatment.
- Complete any training that may be necessary to deliver techniques use in delivering the treatment.
- Plan for any events that will be used in the treatment.
- Complete the human subjects review process.
  - Prepare the university Institutional Review Board application for the protection of human subjects for the university granting the degree. Doctoral students must complete a form or questionnaire about the nature of and procedures for the dissertation research. The informed consent form, all measures, and the participant demographic data form must also be included in the application. Other written or scripted information given to participants may also be required as part of the application.
  - Prepare any human subjects review application for the organization(s) where data will be collected.
  - Reconcile any differences between the requirements mandated by two different Institutional Review Boards, e.g. differences in the wording of the informed consent form.
- Pilot test any treatment and data collection measures with a small number of pilot test participants. Measures include instruments, tests, questionnaires, structured interviews and interviewer instructions, semi-structured interviews and interviewer

instructions, focus groups, journaling, written, visual, auditory, or tactile exercises, and observations. Also, pilot test any participant demographic data forms. Data preparation and statistical programming can also be pilot tested with the data obtained from the pilot study. Conducting a pilot study with a small number of participants provides an opportunity to evaluate the appropriateness of the research procedures, the administration of measures, and the use of any measures (including a participant demographic information forms) that were specifically created for the dissertation research. A well designed and executed pilot study reduces the chances of committing a methodological error that compromises the findings of the dissertation. In this case, "An once of prevention is worth a pound of cure."

- Submit a second human subjects review if any substantive changes are made in the treatment or measures as a result of the pilot study.
- Prepare and disseminate an advertisement for the research if participants self-select themselves. Include in the advertisement a brief purpose statement, criteria for participation, and contact information for indicating a willingness to be involved in the dissertation.
- Prepare a reminder letter or e-mail for participants who have failed to complete their questionnaire.
- Select and train assistants to actually collect data from the participants in order to limit the impact of potential researcher bias [Quantitative].
- Select individuals who will participate in the dissertation research.

Procedures During Data Collection

- Sequential steps in data collection include:
  - Read the instructions to the participants for data collection using the script prepared for this purpose. For Internet-based administration of measures, the instructions are included in text format that is presented prior to data collection.
  - Identify participants who would like to receive an aggregate summary of the findings of the dissertation. A paper-based form or an Internet Web site page can be used to collect these requests.
  - Collect the data from instruments, tests, questionnaires, structured interviews, semi-structured interviews, focus groups, journaling, written, visual, auditory, or tactile exercises, and observations.
  - Disseminate the reminder letter or e-mail for participants who have failed to complete their questionnaire.
  - After the completion of data collection, disseminate a more detailed explanation of the purpose of the study, notify the participants of an optional debriefing session, and provide contact information so the participants can request assistance in dealing with any issues or concerns resulting from completing any of the measures or experiencing any treatments.
  - Extract relevant data from archival sources.

Procedures After Data Collection

- Sequential steps in follow-up after data collection include:
  - Analyze the data collected from the participants.
  - Send aggregate summaries of the findings to participants who requested this information.
  - Provide an optional debriefing for participants who want to learn about and discuss the aggregate results of the dissertation or to receive a referral to a service provider to deal with one or more concerns that were prompted by completing a measure or receiving a treatment or control intervention.
  - Provide the organization where the research was conducted with the same aggregate summary of the results that were prepared for the participants.
- For the Procedures section of the ***Dissertation Concept Paper***, include one paragraph, or a list, to describe the procedures for the dissertation. No references are necessary for the description of the procedures.

CHAPTER 8
THE FINDINGS CHAPTER

The findings chapter presents the results of the analyses that were described in the data analysis section of Chapter 3. The presentation of the findings provides the reader with data needed to reach his or her own tentative answers to the research questions posed in the dissertation research. The reader can then compare his or her tentative answers to the tentative answers provided by the doctoral student in the discussion chapter that follows.

- Begin with a one paragraph description of the organization of Chapter 4 by APA level 2 headings. No heading is needed for this paragraph.

Research Questions and Hypotheses

- Restate all research questions and any hypotheses to clarify which findings are related to which questions and hypotheses.
- If only one research question and one hypothesis are posed, the "Research Question" and "Hypothesis" headings would not be used.
- Present the results of more complex analyses in tables and figures, while more simple analyses can be presented within the text.
    - Report effect sizes for all inferential statistics, as it is important to establish the practical, as well as statistical significance of the findings.
- Report the internal consistency, e.g. coefficient alpha reliabilities for all scales and sub-scales from the measures used in the dissertation research.
- Report the inter-rater reliability for all measures using expert ratings of journaling, written, visual, auditory, or tactile exercises, and observations.
- Include references for any uncommon statistical analyses as appropriate.
- For qualitative studies, report on the analysis of the raw data and include the actual raw data in an appendix. In cases where the raw data are extensive, indicate that the raw data are available from the author upon request. The actual raw data can also be made available on an Internet Web site. It is crucial to ensure that it is not possible to identify any individual with any specific raw data.

Additional Findings

- The optional Additional Findings section provides an opportunity to present further investigation of quantitative data that goes beyond the research questions or hypotheses originally posed in the dissertation. The formulation of unanticipated research questions and collection of additional data as a study evolves is a common aspect of qualitative research. As a result, additional findings are only presented in quantitative dissertations.
    - Serendipity can play an important role in quantitative dissertation research. The analysis of the data for a particular research question may produce some unusual or unanticipated results that would be worthwhile to follow up with further analysis.

- Or, reflecting on the results obtained from the analyses of research questions can result in some divergent thinking about additional variables that would result in a modified or new research question. Sources of data for additional variables could include participant demographic data forms, e.g. age or scales on measures that were not used in the original research questions.
- Additional variables used in these analyses may or may not have literature in Chapter 2 that provides a foundation for interpretation. When literature is available to support a valid interpretation of the findings, allowing the discussion to go beyond mere speculation, it is appropriate to include these additional findings as part of the discussion in Chapter 5. When adequate literature is not available to support discussion of the results, the findings from additional data analyses are only discussed in the section on implications for future research.
- In some types of qualitative research, such as action research, a section on additional data analyses would not be required as all data collected in the dissertation would have equal status, with the review of the literature evolving in synch with the evolution of the research questions.

CHAPTER 9
THE DISCUSSION CHAPTER

Chapter 5 provides a discussion of the findings of the dissertation, as well as exploring the implications of the findings for theory, research, practice, education and training, and public policy. The chapter is intended to help the reader understand the meaning of the findings in relation to the previous theory and research presented in the review of the literature in Chapter 2. The discussion allows the reader to evaluate whether or not the research advances theory and practice.

The discussion provides an interpretation of the findings of the dissertation research within the context of the literature review, using key citations from the review of the literature Chapter 2 to support the interpretation for each hypothesis. After utilizing the literature as a basis for interpretation, the researcher may suggest alternate explanations based on integrative insights from his or her understanding of the field. For findings that have no literature to provide a basis for interpretation, the researcher may also suggest alternate explanations based on integrative insights from his or her understanding of the field. In summary, the discussion should be written by viewing the findings in Chapter 4 through the lens of the literature in Chapter 2.

One strategy for ensuring that the literature in Chapter 2 is appropriately integrated into the discussion involves a card sorting procedure using the following steps.

1. First, read the review of the literature and identify key citations relevant to the findings. It is not necessary to include all the literature reviewed in Chapter 2. An unnecessarily complex discussion can be as bad as an overly simplistic discussion.
2. On the front of a 3x5 card, write the theoretical construct, research findings, or issue that is most relevant to the findings. On the back of the card write the author(s), date and page number(s) of the relevant text.
3. Sort the cards by research question or research question and hypothesis.
4. Create groups for each research question or research question and hypothesis by sorting the cards according to similarity of theoretical construct, research findings, or issue.
5. Sequence the card groups in a way that provides a coherent discussion of the findings. Citations that do not make a meaningful contribution to the discussion can be eliminated.

The discussion has the potential to be the most satisfying, interesting, and meaningful aspect of the dissertation research. Being able to contribute to the literature through the discussion in Chapter 5 is the reason doctoral students are willing to commit the substantial amount of time and resources required to conduct the dissertation research. It is understandable that doctoral students may be tired, overwhelmed, or even weary of the topic at this point. Stop, rest, reflect on the findings, and then write a great discussion of the results. Stop and savor the moment before moving on to write the limitations, implications, and conclusion sections of Chapter 5.

Over time, there has been an increase in the number and interaction of variables examined in quantitative dissertations. This trend has made it possible to examine a wider range of research questions. Unfortunately, this potential improvement in research has sometimes resulted in lesser quality dissertations. Some of these more comprehensive dissertations have a

weak discussion of the findings. The same problem may exist when qualitative dissertations pose a large number of research questions. The actual discussion portion of dissertations typically ranges between five to fifteen pages. The amount of space allocated for discussion has not proportionately increased in some more comprehensive dissertations. As a result, the potential for an in-depth discussion of the findings that fully utilizes appropriate literature from Chapter 2 is not realized. In some cases, the dissertation researcher simply runs out of time, space, and energy to achieve the level of analysis and critical thinking that makes a truly substantive contribution to the literature. As the number and interaction of variables increases in dissertation research, there is an exponential increase in the complexity of the discussion. Simply put, "Bigger is not necessarily better." This increased complexity is not necessarily bad, nor should more comprehensive dissertations be avoided. On the contrary, dissertation research should take advantage of analytical procedures that allow researchers to ask more comprehensive questions. However, as dissertation researchers finalize their research questions, they need to realize that more time and space will be needed to adequately discuss more comprehensive findings.

After completing the first draft, consider the following questions in evaluating the quality of the discussion:

1. Does the discussion show any evidence of researcher bias? (See a discussion of this problem in the next section of this chapter.)

Research Questions and Hypotheses

- Restate all research questions and hypotheses to clarify which discussion paragraphs are related to which questions and hypotheses. If multiple research questions and hypotheses are posed, use the headings, *"Research Question One," "Research Question Two," "Hypothesis One,"* and *"Hypothesis Two."* If only one research question and one (or no) hypothesis are posed, the "*Research Question*" and "*Hypothesis*" headings would not be used.
- In a qualitative dissertation, the summary of the findings and the discussion would be organized by research questions rather than hypotheses.
- Include a summary of the findings and a discussion of the findings for each research question or hypothesis. Providing a summary of the findings for each research question or hypothesis makes it easier for the reader to focus on and understand the interpretation of specific findings. It is also important to provide a summary of the findings given that the discussion chapter is often the only dissertation chapter that is read when the goal of the reader is to construct their own literature review.
- Any significant differences that are identified in the findings are tentative until multiple sources of evidence show that differences are sustainable across participants, measures, settings, time, and investigators. The language used in the discussion needs to reflect this tentativeness, e.g. "This study provides preliminary evidence that _____ may be effective in _____ for_____."
- A potentially serious problem in writing the discussion involves reaching conclusions that are not supported by the findings. Experience bias, population bias, theory bias, intervention bias, funding bias, and policy bias may increase the chances that the doctoral student finds what they are looking for in the findings and interprets the results

accordingly. The doctoral student may, or may not, be aware of potential bias. As the dissertation is written, edited, and evaluated, the questions about potential positive and negative bias needs to be asked, "Does the interpretation of the findings follow directly from the data? Are there any extraneous conclusions that can not be related to the data?" Self-awareness and effective supervision are essential in avoiding bias in the interpretation of the results.

  - Doctoral students are often keenly aware of the social significance of their research and often have direct experience with the populations that are included in the dissertation research. Without careful awareness, population bias can compromise the findings, the discussion of the findings, and the implications.
  - Experience with, and commitment to, a particular theoretical perspective or specific intervention strategy can lead to unintentional researcher bias that becomes a threat to the validity of the research. It is very difficult, if not impossible, to eliminate all theory bias and intervention bias.
  - Research is inextricably bound with culture and various social, political, and economic factors that can contribute to personal bias in research. While it is impossible to avoid personal bias, this bias can be reasonably controlled with awareness on the part of the doctoral student and quality supervision from the major professor and the supervisory committee.
  - It is important to acknowledge awareness of potential funding bias by disclosing the source of any dissertation funding. Steps taken to minimize bias, such as a specific review of the dissertation by an auditor, need to be described in the methodology chapter.
  - It is especially important for the doctoral student to show insight by describing his or her awareness of their potential bias in discussing the findings of their dissertation and the implications of the results. Evidence of this awareness can be included in the introduction to the discussion chapter.

- After the first draft of the discussion is complete, verify that appropriate references from the literature in chapter 2 are included in the discussion of each hypothesis.

Additional Findings

- Summarize any additional findings that have a foundation of literature presented in Chapter 2. Then discuss the meaning of the findings in light of theory, prior research, and practice. Future research questions that are based on the additional findings are then included at the end of the Implications for Future Research section. It is possible that the discussion of the additional findings and implications are one of the most important outcomes of the dissertation research.
- As stated in Chapter 4, additional findings may or may not have the necessary literature in Chapter 2 to support an interpretation. When literature is available to support a valid interpretation of the findings that allows the discussion to go beyond mere speculation, additional findings can be included as part of the discussion in Chapter 5. When the required literature is unavailable to support the discussion, the findings from additional data analyses are only discussed in the Implications for Future Research section.

- Include a summary of the findings and a discussion of the findings for each research question or hypothesis. Providing a summary of the findings for each research question or hypothesis makes it easier for the reader to focus on and understand the interpretation of specific findings. It is also important to provide a summary of the findings given that the discussion chapter is often the only dissertation chapter that is read when the goal of the reader is to construct their own literature review.
- After the first draft of this section is complete, verify that appropriate references from the literature in chapter 2 are included in the discussion of additional findings.

Limitations of the Study

The limitations of the study section explain the unexpected circumstances that constrain the interpretation of the findings of the dissertation research. Delimitations are anticipated constraints whereas limitations are unanticipated constraints. For example, the restrictions associated with quasi-experimental research designs in terms of the lack of random assignment to groups are known before the data are collected and thus are delimitations. Limitations may result from unanticipated problems associated with sampling, the measures, the treatment, the data analyses, and the execution of the procedures. Awareness of the limitations of the dissertation research helps the reader to judge whether or not the methodology actually used in the dissertation research provided an appropriate opportunity to answer the research questions or test the hypotheses. Awareness of the limitations of the dissertation research also may help doctoral students and other researchers to avoid similar problems in future research. The limitations included in the following subsections are not intended to be exhaustive, as a variety of other limitations in research may exist. Specific limitations sections are included in the dissertation only if problems occurred in executing the research.

- Begin with one paragraph describing the organization of the Limitations section by APA level 2 headings. A purpose statement for the section can be added if desired. No heading is needed for this paragraph.

Limitations in Sampling

The following limitation is associated with sampling in the dissertation research:

- Unforeseen difficulty in obtaining a large enough number of subjects in specific demographic categories may limit the generalizability of the findings.

Limitations in the Measures

The following limitation is associated with measures used in the dissertation research:

- The reliability, in the form of internal consistency, is calculated in quantitative studies and reported as part of the findings of the research. It may be that a measure has previously demonstrated good reliability, but in this study the reliability of the measure is low, making it more difficult to test hypotheses, e.g. hypotheses for co-relational research designs.

Limitations in the Treatment

The following limitation is associated with data analyses used in the dissertation research:

- Unforeseen difficulty in utilizing the techniques, resources, or events used in delivering the treatment that was part of the research design, e.g. an Internet-based Web maintained by an organization outside the researchers control failed to function during the time allocated for executing the treatment. This part of the limitations section would only be present if there was a problem in an experimental study.

Limitations in the Data Analyses

The following limitation is associated with data analyses used in the dissertation research:

- Unforeseen difficulty in obtaining a large enough number of subjects in the dissertation research may have necessitated the use of a less robust data analysis technique, which may limit the quality of the evidence used to answer a research question or test hypotheses.

Implications

The implications section provides a series of recommendations based on the knowledge gained from the dissertation research. These recommendations can then be used to advance theory, research, practice, education and training, and public policy.

- Begin the Implications section with one paragraph describing the organization of the section by APA level 2 headings. A purpose statement for the section can be added if desired. No heading is needed for this paragraph.

Implications for Theory Development

The section on implications for theory development relates the knowledge gained from the dissertation research to the principles of one or more theories. This knowledge can be used by doctoral students or other theorists to advance the theory that is available to guide future research and practice.

- Specifically, the knowledge generated by the dissertation research can be used to:
  - Provide evidence that affirms existing theoretical principles
  - Provide evidence that challenges existing theoretical principles
  - Add new theoretical principles to an existing theory
  - Suggest options for developing a substantially new theory.
  - Identify options for additional research related to related to theory.
- Include references as appropriate.

Implications for Research

The section on implications for research uses the knowledge gained from the findings or the methodology to guide future research. This knowledge can be used by doctoral students or other researchers to design studies that further narrow gaps in the literature. This knowledge can also be used to design future quantitative studies that are more valid and generalizable, or future qualitative studies that are more transparent, coherent, and credible.

- Specifically, the knowledge generated by the dissertation research can be used to:
  - Suggest future research questions and hypotheses for examination.
  - Help other researchers select (or avoid) variables and measures that may be appropriate (or inappropriate) for a particular topic area of research.
  - Suggest new approaches to analyzing data from similar hypotheses.
- The experience gained in completing the dissertation research can help other researchers:
  - Apply innovative treatments, measures, or procedures in collecting data that were used in the dissertation research.
  - Avoid the anticipated delimitations that were known about in the methodology.
  - Avoid the unanticipated limitations that became apparent with the execution of the procedures.
- Include references from Chapters 2 and 3 as appropriate.
- Add any unexamined research questions stemming from the critical analysis of the literature to the suggestions for future research.
- At the end of this section, present any recommendations for future research that are based on the discussion on of additional findings that were included previously in the Discussion section. If the additional findings do not have the foundation of literature in Chapter 2 necessary to support a discussion, briefly summarize the results, and suggest future research topics. New references can be added as needed to support these recommendations for future research.

Implications for Practice

The section on implications for practice relates the knowledge gained from the dissertation research to the provision of educational and social services. This knowledge can be used by practitioners, researchers, and public policy makers to confirm the efficacy of existing services, to modify the provision of existing services, and to design new services.

- Some research in the social sciences is very basic in nature and as a result there may be few, if any, direct links to practice. However, most dissertation research in the social sciences has some link to practice.
- Innovative educational or social service interventions that have been shown in dissertation research to be effective can be added to existing services, modify existing services, or replace existing services.
- Innovative educational or social service interventions that have been shown in dissertation research to be effective can provide a rationale for maintaining existing interventions, as well as providing accountability data.
- The knowledge gained from more basic dissertation research, e.g. the relative contribution of two variables to the variance in another variable, can be used to design new educational or social service interventions that include or emphasize a specific variable, e.g. emphasizing the cognitive restructuring of dysfunctional career thoughts for interventions designed to reduce career indecision among at-risk college students.

- Include references as appropriate.

Implications for Education and Training

The section on implications for education and training relates the knowledge gained from the dissertation research to the dissemination of concepts that have the potential of enhancing the performance of practitioners.

- Some dissertation research has direct implications for education and training. For example, quantitative experimental dissertations may show the efficacy of human service interventions that can be added to appropriate education and training.
- Include references as appropriate.

Implications for Public Policy

The section on implications for public policy relates the knowledge gained from the dissertation research to establishing priorities for allocating limited public funding for the provision of needed educational and social services. This knowledge can be used by practitioners and researchers to prepare funding requests for new or continuing projects that relate to evolving public policy. Policy makers can use knowledge generated by dissertation research to identify promising topics for creating request for proposals (RFPs) that allow practitioners and researchers to respond to funding opportunities.

- As with implications for practice, some basic social science research may not have links to public policy. However, if dissertation research has implications for practice, then policy implications are likely to exist because the delivery of services by practitioners exists within the context of public policy.
- Innovative educational or social service interventions that have been shown in dissertation research to be effective can be the catalyst for providing funding to deliver, or further study, the intervention. For example, preliminary evidence of the effectiveness of using telephone-based distance career counseling with underserved persons in rural areas may relate to public policy on widening participation in counseling services that contributes to reduced unemployment. Funding for pilot projects or funding for further studies, can be sought by practitioners and researchers. Policy makers can stimulate interest in innovation emanating from dissertation research by creating a request for proposals (RFP) that meet specific policy priorities.
- Some educational or social service interventions or relationships among variables may indicate that problems, or potential problems, exist in the delivery of services. This awareness of problems may lead to a reconsideration and revision of educational standards, social service standards, ethical codes and standards of practice for professionals, certification and licensure requirements, as well as accreditation standards for education and training programs. For example, a negative relationship between career indecisiveness and high school graduation rates could lead to additional research on this topic that may ultimately lead to increased career guidance funding in one state for at-risk students in high school.
- Include references as appropriate.

Conclusion

The conclusion section includes one to two paragraphs that synthesize the discussion and one paragraph that highlights the implications of the study in view of the social significance of the research. The conclusion provides the opportunity to present key elements of the knowledge resulting from the dissertation research and the priorities for future work on the dissertation topic. Public policy makers who may take action based on what has been learned from the dissertation research may pay particular attention to the conclusion.

A dissertation involves an enormous effort on the part of doctoral students, their major professors, and their supervisory committee members. The conclusion provides the opportunity to communicate the key aspects of the contribution to the literature made by the dissertation research. The conclusion also shows the results of a substantial and sustained effort to investigate a socially significant topic that is relevant to theory, research, and practice.

CHAPTER 10
REFERENCES AND APPENDICES

References

The references indicate the information sources for the review of the literature and for the methodology used in the dissertation. Complete references are essential for other researchers who plan to replicate or extend the dissertation research. Secondary sources, such as other references that cite an original work and textbooks, should be used only when original sources are unavailable.

Appendices

The Appendices contain the resources that were required in order to execute the dissertation. Having actual copies of the resources used in a dissertation helps other researchers who are interested in replicating or extending the research. Inclusion or exclusion of the following items depends on the methodology used in the dissertation research. Items that might be included are as follows:

- Participant demographic data collection form.
- Informed consent form.
- Scripts for instructions regarding informed consent, data collection, or participant debriefing after the completion of the research.
- Instruments, tests, questionnaires, structured interviews and interviewer instructions, semi-structured interviews and interviewer instructions, focus group questions and instructions, journaling instructions, written, visual, auditory, or tactile exercises and accompanying rating forms for experts, and observation protocols developed by the doctoral student for his or her dissertation research. Instructions for completing each measure should also be included in the appendices if these instructions are not included with the measure itself.
- Copyrighted measures used in the dissertation when permission has been granted for inclusion in the dissertation.
- Permission letters for the use of copyrighted materials.
- Limited-use research measures used in the dissertation when permission has been granted for inclusion in the dissertation.
- Permission letters for the use of limited-availability research materials.
- Observation rating form with instructions or training resources for the trained raters.
- Written, visual, auditory, or tactile exercise rating form with instructions or training resources for raters.
- Advertisements for participation in the dissertation research.
- Form for the participants to request a brief summary and discussion of the aggregate results of the dissertation research.

- Reminder letter or e-mail for participants who have failed to complete their questionnaire.
- Brief summary and discussion of the aggregate results of the dissertation research for interested participants and the organization where the data for the dissertation was collected.
- Instructions for participants who wish to receive a referral to a service provider to deal with one or more concerns that were prompted by completing a measure or receiving an experimental or control intervention.
- Approval letter from the Institutional Review Board on the use of human subjects in the dissertation research.
- Aggregate summary of the research for participants requesting this information and for the organization where the data were collected.
- Raw data analyzed in a qualitative dissertation.

CHAPTER 11

AN EXAMPLE OF DISSERTATION ORGANIZATION

The level of the APA heading for each dissertation section is presented as it would appear in the dissertation as opposed to heading levels that would be appropriate for this book. Examples are provided in this book to clarify headings and selected concepts, such as the title, research questions, and literature review. In the following example, a quantitative (co-relational) research design would be used to test the hypotheses.

The Contribution of Cognitive Distortions and Negative Career Thoughts to Variability in Career Indecision for College Students Receiving Career counseling at a College Career Center

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Cognitive Distortions and Career Decision Making

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Self-help services

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Experiential education

Job placement

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Hypothesis Three

Hopelessness will account for variance in career indecision, controlling for age, for college students receiving career counseling at a college career center.

Hypothesis Four

Preoccupation with danger will account for variance in career indecision, controlling for age, for college students receiving career counseling at a college career center.

Hypothesis Five

Decision-making confusion will account for variance in career indecision, controlling for age, for college students receiving career counseling at a college career center.

Hypothesis Six

Commitment anxiety will account for variance in career indecision, controlling for age, for college students receiving career counseling at a college career center.

Hypothesis Seven

External conflict will account for variance in career indecision, controlling for age, for college students receiving career counseling at a college career center.

Hypothesis Eight

Self-Blame, helplessness, hopelessness, preoccupation with danger, decision-making confusion, commitment anxiety, external conflict, and career indecision will be directly correlated, controlling for age, for college students receiving career counseling at a college career center.

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Content validity.

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Development of the Measure

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Adequacy of Normative Groups.

Representativeness of Normative Groups.

Reliability

Validity

Face validity.

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Appendix A

Dissertation Research Bibliography

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Appendix B

Checklist for Completing the Dissertation Concept Paper

- ☐ Read the theory and past research contained in the literature related to the topic, reflect on the readings, discuss the readings with others, and reflect on the discussions
- ☐ Select a preliminary topic for the paper
- ☐ Critically review the literature
- ☐ Formulate research question(s)
- ☐ Explore potential data collection sites or sources of archival data
- ☐ Develop an outline for the paper using the recommendations presented in this book
- ☐ Seek peer review of the outline for the paper
- ☐ Make revisions to the outline as appropriate
- ☐ Seek major professor review of the outline for the paper
- ☐ Make revisions to the outline as appropriate
- ☐ Complete the dissertation concept paper
- ☐ Seek peer review of the paper
- ☐ Make revisions to the paper as appropriate
- ☐ Seek local editor review of the paper
- ☐ Make revisions to the paper as appropriate
- ☐ Seek major professor review of the paper
- ☐ Make revisions to the paper as appropriate
- ☐ Submit the final draft to the major professor
- ☐ Schedule the supervisory committee meeting
- ☐ Provide supervisory committee members with a copy of the dissertation concept paper and schedule a supervisory committee meeting
- ☐ Prepare a PowerPoint presentation and handouts as needed
- ☐ Present the paper at the supervisory committee meeting and take notes of the comments made by the supervisory committee members
- ☐ Discuss the feedback received form supervisory committee members with the major professor and agree on the plan for completing the dissertation prospectus, seeking additional input and approval from supervisory committee members as needed
- ☐ Relax and reflect on the progress made toward completing the research
- ☐ Begin work on the dissertation prospects

Appendix C

Checklist for Completing the Dissertation Prospectus

- ☐ Review the dissertation concept paper.
- ☐ Update the literature review from the preliminary examination literature review or preliminary examination research proposal if available. Update the literature review from the Master's Thesis or supervised research project if available.
- ☐ Reflect on the readings, discuss the readings with others, and reflect on the discussions
- ☐ Develop an outline for Chapters 1, 2, and 3 of the dissertation prospectus using these recommendations as appropriate
- ☐ Seek peer review of the outline for the prospectus
- ☐ Make revisions to the outline as appropriate
- ☐ Seek major professor review of the outline for the paper
- ☐ Make revisions to the outline as appropriate
- ☐ Negotiate data collection permission with appropriate organizations
- ☐ Arrange for a physical or virtual (Internet-based) location for collecting data from the participants
- ☐ Arrange for a secure location for the storage of raw data from the participants
- ☐ Prepare any participant demographic data collection forms that is needed
- ☐ Prepare the informed consent form that is included as part of the Institutional Review Board application
- ☐ Develop, and check for potential bias, any instrument items, test items, questionnaire items, structured interview questions and interviewer instructions, semi-structured interview questions and interviewer instructions, focus groups questions, journaling instructions, and written, visual, auditory, or tactile written, visual, auditory, or tactile exercise instructions for participants and trained raters that are created by doctoral students for their dissertation research**.**
- ☐ Establish the content validity of instruments, tests, questionnaires, structured interviews, semi-structured interviews, focus groups, journaling, written, visual, auditory, or tactile exercises, and observation protocols that are created by doctoral students for their dissertation research**.**
- ☐ Obtain any necessary resources needed for the treatment
- ☐ Complete any training necessary to competently deliver the treatment
- ☐ Plan any necessary events needed for the treatment
- ☐ Prepare any scripts for instructions regarding informed consent, data collection, or participant debriefing after the completion of the research
- ☐ Send requests to the copyright holders for the use of copyrighted measures in the dissertation research that will be included in the Appendices
- ☐ Send requests to the original researcher for the use of any research versions of measures in the dissertation research that will be included in the Appendices
- ☐ Determine the need for alternating the presentation order of measures in order to minimize any ordering effect if multiple measures are being used
- ☐ Prepare any rating forms and training resources needed for trained raters and train the raters. Trained raters are used in providing data for exercises and observations.

- ☐ Pilot test any data collection measures with a small number of pilot test participants
- ☐ Pilot test any paper or Internet-based participant demographic data forms
- ☐ Pilot test any data preparation and statistical programming with the data obtained from the pilot study
- ☐ Prepare and disseminate any advertisement for research participation that is needed
- ☐ Prepare a reminder letter or e-mail for participants who have failed to complete their questionnaire.
- ☐ Prepare the university Institutional Review Board application for the protection of human subjects for the university granting the degree
- ☐ Prepare any human subjects review application for the organization(s) where data will be collected.
- ☐ Reconcile any differences between the requirements mandated by two different Institutional Review Boards, e.g. differences in the wording of the informed consent form.
- ☐ Complete chapters 1, 2, and 3 of the dissertation prospectus including the appendices
- ☐ Seek consultation on the data analysis from the major professor (and an appropriate consultant as needed)
- ☐ Seek peer review of the prospectus
- ☐ Make revisions to the dissertation prospectus as appropriate
- ☐ Seek local editor review of the paper
- ☐ Make revisions to the dissertation prospectus as appropriate
- ☐ Seek major professor review of the dissertation prospectus
- ☐ Make revisions to the paper as appropriate
- ☐ Submit the final draft to the major professor
- ☐ Schedule the supervisory committee meeting
- ☐ Provide supervisory committee members with a copy of the dissertation prospectus and schedule a supervisory committee meeting
- ☐ Prepare a PowerPoint presentation and handouts as needed
- ☐ Present the prospectus at the supervisory committee meeting and take notes of the comments made by the supervisory committee members
- ☐ Discuss the feedback received form supervisory committee members with the major professor and agree on the plan for completing the dissertation, seeking additional input and approval from supervisory committee members as needed
- ☐ Relax and reflect on the progress made toward completing the research
- ☐ Begin work on the dissertation

Appendix D

Checklist for Completing the Dissertation

- ☐ Review the dissertation prospectus.
- ☐ Update the literature review from the dissertation prospectus
- ☐ Reflect on the readings, discuss the readings with others, and reflect on the discussions
- ☐ Revise Chapters 1, 2, and 3 of the dissertation
- ☐ Seek peer review of Chapters 1, 2, and 3 of the dissertation
- ☐ Renegotiate site selection for data collection or renegotiate access to the archival data source
- ☐ Seek re-approval of the human subjects review if any changes resulted in the methodology as a result of the supervisory committees' review of the prospectus, and (if needed) re-approval from the organization where data will be collected;
- ☐ Select individuals who will participate in the dissertation research.
- ☐ Collect data
- ☐ Analyze data
- ☐ Develop an outline for Chapters 4 and 5 of the dissertation
- ☐ Seek peer review of the outline for the prospectus
- ☐ Make revisions to the outline as appropriate
- ☐ Seek major professor approval of the outline
- ☐ Make revisions to the outline as appropriate
- ☐ Complete Chapters 4 and 5 of the dissertation
- ☐ Seek peer review of Chapters 4 and 5
- ☐ Make revisions to the dissertation as appropriate
- ☐ Seek local editor review of the dissertation
- ☐ Make revisions to the dissertation as appropriate
- ☐ Seek major professor review of the dissertation
- ☐ Make revisions to the dissertation as appropriate
- ☐ Submit the final draft to the major professor
- ☐ Schedule the supervisory committee meeting
- ☐ Provide supervisory committee members with a copy of the dissertation and schedule a supervisory committee meeting
- ☐ Prepare a PowerPoint presentation and handouts as needed for the dissertation defense
- ☐ Present and defend the dissertation at the supervisory committee meeting and take notes of the comments made by the supervisory committee members
- ☐ Discuss the feedback received form supervisory committee members with the major professor and agree on the plan for completing the dissertation, seeking additional input and approval from supervisory committee members as needed
- ☐ Complete all necessary forms and procedures for submission of the dissertation to the university
- ☐ Relax and reflect on the completion of the research
- ☐ Begin work on the dissertation manuscript

Appendix E

Checklist for Completing the Dissertation Manuscript

- □ Negotiate the order of authorship if the major professor and one or more supervisory committee members are invited to be co-authors. It is suggested that as a minimum students invites their major professor to be the second author of the dissertation manuscript. In all cases, students will be the senior author of the manuscript unless the student refuses to submit the manuscript to a peer-reviewed journal, in which case the major professor becomes the senior author and completes the manuscript, fulfilling the ethical obligation to publish completed research.
- □ Select a peer-reviewed journal for submission of the manuscript
- □ Review the dissertation.
- □ Develop an outline for the manuscript
- □ Seek peer review of the outline for the manuscript
- □ Make revisions to the outline as appropriate
- □ Seek major professor review of the outline for the manuscript (and other co-authors as appropriate)
- □ Make revisions to the outline as appropriate
- □ Prepare the manuscript according to the manuscript guidelines of the journal selected for submission
- □ Seek peer review of the manuscript
- □ Make revisions to the manuscript as appropriate
- □ Seek local editor review of the manuscript
- □ Make revisions to the manuscript as appropriate
- □ Seek major professor review of the manuscript (and other co-authors as appropriate)
- □ Make revisions to the manuscript as appropriate
- □ Submit the cover letter and final draft of the manuscript to the journal editor
- □ Discuss editorial comments with the major professor (and other co-authors as appropriate)
- □ If needed, make revisions to the manuscript as appropriate and resubmit with a cover letter
- □ Continue the revision process until the manuscript is accepted
- □ If the manuscript is rejected, select another journal for submission and repeat the process as needed until the manuscript is published
- □ Consider the possibility of preparing other journal submissions based on the dissertation research
- □ Relax and reflect on the contribution that has been made to the research literature, as well as the progress made toward completing the doctoral degree