



The Guide for Completing the EdD Dissertation at Columbus State University

Doctoral Office of Advising and Records
College of Education and Health Professions
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Table of Contents

Introduction.....	5
Formatting.....	12
Dissertation Approval Form	12
Title Page	12
Copyright Page	15
Dedication	15
Acknowledgement	15
Vita	16
Abstract	16
Table of Contents	16
List of Tables and List of Figures	17
Chapters I and V	18
References	19
Appendices	20
Tables and Figures	21
Additional Notes	22
Writing Guidelines.....	25
Plan the Writing	25
Write and Rewrite.....	25
Find Readers	25
Keep Writing.....	26
General Suggestions.....	26
Academic Dishonesty	27
Guidelines for Formal, Technical Writing.....	28
Dissertation Prospectus.....	31
Chapter I: Introduction.....	33
General Information.....	33
Statement of the Problem.....	34
Conceptual or Theoretical Framework	36
Definition of Terms.....	36
Significance of the Study	37
Research Questions/Hypotheses	38
Methodology	40
Limitations/Delimitations	41
Summary	42

Chapter II: Review of Literature	43
Purpose of the Literature Review	44
Writing Tips for the Literature Review	48
Start the Literature Review Process by Selecting a Topic	49
Searching the Literature	51
Introduction to Literature Review	52
Discussion of Research	54
Summary	60
Chapter III: Methodology	61
Introduction	62
Research Questions/Hypotheses	63
Resign Design	63
Population	64
Participants	65
Instrumentation	65
Pilot Study	68
Data Collection	69
Data Analysis	75
Summary	76
Chapter IV: Report of Data and Data Analysis	77
Consistency	80
Clustering of Data	81
Summarizing Data	82
Cautions about Interpreting the Data	83
Introduction	85
Research Questions/Hypotheses	85
Participants	85
Findings	86
Summary	88
Chapter V: Summary, Conclusions, and Recommendations	89
Introduction	89
Analysis of Research Findings	89
Discussion of Research Findings	89
Conclusions	90
Implications	92
Limitations	93
Recommendations	93
Concluding Thoughts	94
Additional Notes	94

Appendices98

Introduction

The doctoral dissertation is a culminating experience and the termination activity for the Doctor of Education (Ed.D.) degree. The dissertation is planned with reference to the doctoral candidate's field of specialization and professional goals. It may take the form of a field project, a creative study, or a more formal research study, and it will culminate in a written, scholarly report that is an original contribution to the literature of the field. A doctoral candidate must maintain matriculation until the dissertation is completed. The subject of the research and the components of the project are to be decided by the doctoral candidate and approved by his or her doctoral dissertation committee. The following guidelines are provided to aid the doctoral candidate and the doctoral dissertation committee as they plan and submit the doctoral dissertation.

Many types of research are acceptable, and most topics are admissible when successfully tied to education and the doctoral candidate's program track. This guide contains the major ingredients for completing a dissertation successfully. Each dissertation may not have all the components or present the research in the order stated here; however, the doctoral candidate should have a logical sequence for reporting the quantitative, qualitative, or mixed-method dissertation. In addition, each new major section should start with a brief introduction that links the previous chapter with the present discussion. Each chapter should conclude with a brief summary of the major elements within the chapter.

Consistency of format and presentation is important to the success of the doctoral dissertation. Doctoral candidates in the EdD in Curriculum and Leadership Program at Columbus State University are required to follow APA (American Psychological Association) 6th edition guidelines when preparing the doctoral dissertation; however, some deviations from

accepted APA format will be utilized throughout the dissertation and may be required by individual chairs of doctoral dissertation committees. Consequently, doctoral candidates should have two manuals in hand before beginning the dissertation: (1) the 6th edition of the *Publication Manual of the American Psychological Association*, which can be purchased in the University Bookstore, and (2) *The Guide for Completing the EdD Dissertation at Columbus State University*, which is available as a free PDF download from the [Doctoral Office of Advising and Records](#). The chair of the doctoral dissertation committee and the Director of the Doctoral Program must approve any deviation from the recommended doctoral dissertation format before the prospectus is completed and approved.

The doctoral dissertation should be viewed with respect and some apprehension, but not with fear. Although the doctoral dissertation will probably be the largest and most complex research conducted to date, the doctoral candidate should visualize the dissertation as a building block process. Chapter I outlines the need for the study (statement of the problem), Chapter II details what others have discovered about the topic (review of the literature), Chapter III contains a detailed description of how the study will be conducted (methodology), Chapter IV presents the results of the study (findings), and Chapter V ties the research back to the literature in Chapter II to explore relationships (conclusions). One should think of the doctoral dissertation as an expanded research paper that examines a topic in great depth with each chapter building on the preceding chapters. Consequently, each chapter must be written with a view toward the whole of the project and not as a totally independent element.

A doctoral dissertation is a formal written document resulting from careful and extended research conducted by graduate students under the supervision of their major professors and with the advice of graduate advisory committees. The dissertation should demonstrate the ability of

the doctoral candidate to conduct scholarly research at an advanced level and illustrate the doctoral candidate's ability to plan and execute original research.

Writing and defending a dissertation is the culmination of a long period of sustained effort. The result should be a document in which the doctoral candidate, the committee, the college, and the University can take pride. Doctoral dissertations are representations of the standards of the degree-granting college and of Columbus State University. The doctoral candidate's doctoral dissertation committee is responsible for judging the technical and professional competency, writing quality, and professional appearance of the doctoral dissertation. All individuals involved in the process, whether writing, proofing, or editing a doctoral dissertation, should ensure that the final document is of the highest quality possible. At Columbus State University, the doctoral dissertation must adhere to certain general standards:

1. Be prepared in accordance with the ethical standards of scholarship and publishing.
2. Be the result of concentrated effort to solve a well-defined problem with a coherent theme.
3. Furnish evidence that the doctoral candidate is familiar with the general rules of scholarship in the discipline. Doctoral candidates must show familiarity with empirical literature and research methods, and they must present research results in a formal manner appropriate to education.
4. Be written in Standard English, following APA (6th edition) guidelines and Columbus State University guidelines.

The following guide depicts the doctoral dissertation process, beginning with the prospectus and ending with publication. The process is divided into four steps. Within each

step, the required components involved with that step are listed (e.g., sections within a specific chapter or points to include within a particular chapter).

Step 1: Complete and Defend the Dissertation Prospectus.

- Complete Chapter I (Introduction).
 - Introduction
 - Statement of the Problem
 - Purpose of the Study
 - Conceptual or Theoretical Framework
 - Definitions of Terms
 - Significance of the Study
 - Research Questions
 - Methodology
 - Limitations/Delimitations
 - Summary
- Complete Chapter II (Literature Review).
 - Review of literature as the extant work pertains to your dissertation topic from the broadest to the most specific).
 - Develop a Conceptual or Theoretical Framework.
 - Identify gap(s) in the Literature leading to the study.
- Create a Reference section. (Make sure each citation has a corresponding reference.)
- Submit dissertation prospectus to chair and other committee members for review.
- Submit the Application for Prospectus Defense to the Doctoral Office of Advising and Records.

- Defend dissertation prospectus successfully.

Step 2: Complete and Defend the Dissertation Proposal.

- Complete rewrites of Chapters I and II per committee's recommendations.
- Expand Chapter II.
- Complete Chapter III (Methodology). (Describe the data analysis in detail so another research could replicate it.)
 - Introduction
 - Research Design
 - Population, Setting, and Participants (include IRB addendum items as Appendices and explicitly state how you will/did protect them)
 - Instrumentation (include all measures and permission letters as Appendices)
 - Data Collection (very detailed so the study can be replicated)
 - Data Analysis
 - Summary
- Submit dissertation proposal to chair and other committee members for review.
- Submit the Application for Proposal Defense to the Doctoral Office of Advising and Records.
- Defend dissertation proposal successfully.
- Complete the IRB application if working with human subjects.

Step 3: Obtain IRB Approval, Collect Data, Analyze Data, and Interpret Data.

- Complete rewrites of Chapters I, II, and III per committee's recommendations.
- Obtain IRB approval from all stakeholders if you are working with human subjects.
- Collect data.

- Analyze and interpret data.
- Complete Chapter IV (Results).
 - Introduction
 - Research Questions
 - Participants
 - Findings
 - Discussion
 - Summary
- Complete Chapter V (Summary, Conclusions, and Recommendations).
 - Introduction
 - Analysis of Research Findings
 - Discussion of Research Findings
 - Conclusions
 - Implications
 - Limitations
 - Recommendations
 - Concluding Thoughts
- Finalize References. (Make sure each citation has a corresponding reference.)

Step 4: Defend and Publish Doctoral Dissertation.

- Submit doctoral dissertation to chair and other committee members for review.
- Submit the Application for Dissertation Defense to the Doctoral Office of Advising and Records.

- Defend the doctoral dissertation successfully. (*Note:* Doctoral dissertation defenses are open to the public.)
- Make any required edits to the doctoral dissertation to address any issues brought up by the doctoral dissertation committee before final submission.
- Submit final draft of the doctoral dissertation and the Library's Submission Approval Form to the Doctoral Office of Advising and Records.

This guide is written as a “paint by the number” approach to acquaint the doctoral candidate with both the components of the doctoral dissertation and the strategies for writing it. The components stipulated for each chapter are the basic minimum, but the chair of the doctoral dissertation committee may add other components as per the requirements of the study described. Doctoral candidates are urged to follow the directions of the chair when writing and submitting any part of the dissertation for review or defense.

Formatting

The doctoral dissertation should be typed using a word processing software utilizing size 12 Times New Roman font. The doctoral dissertation should be arranged in the following order:

- | | |
|-------------------------------|---------------------|
| 1. Dissertation Approval Form | 10. List of Figures |
| 2. Title Page | 11. Chapter I |
| 3. Copyright Page | 12. Chapter II |
| 4. Dedication | 13. Chapter III |
| 5. Acknowledgement | 14. Chapter IV |
| 6. Vita | 15. Chapter V |
| 7. Abstract | 16. References |
| 8. Table of Contents | 17. Appendices |
| 9. List of Tables | |

Dissertation Approval Form

The Dissertation Approval Form is the first page of the dissertation but should not be numbered. The Dissertation Approval Form is provided to the chair of the doctoral dissertation committee by the Doctoral Office of Advising and Records, and it is signed by all committee members, Director of the Doctoral Program, Director of COEHP Graduate Studies, and the Dean of COEHP. Because the Dissertation Approval Form represents an administrative action and is not part of the dissertation, the form is not listed in the table of contents; however, the form is bound with the dissertation.

Title Page

The title page should be the second page of the dissertation but should not be numbered (i.e., it is considered page “ii”). The title should be as concise as possible and provide an

accurate description of the doctoral dissertation. Use your full legal name as it appears on your academic records at Columbus State University. The month and year should be the actual month in which the degree will be officially awarded and not necessarily when the dissertation was accepted by the College's Faculty. Never use a comma between the month and year. The title page should follow exactly the sample contained in this document.

2-inch top margin

A CASE STUDY OF SCHOOL ADMINISTRATORS' AND TEACHERS'
PERCEPTIONS REGARDING PROFESSIONAL LEARNING COMMUNITIES

**1.5-inch left margin
for binding purposes**

**Type title using all
capitals and double
spacing. Titles
should be concise.**

By
Sally Sue Smith

A Dissertation
Submitted in Partial Fulfillment of the Requirements for
the Degree of Doctor of Education
in Curriculum and Leadership
(CURRICULUM)

**← Program Track
(specialization)**

Columbus State University
Columbus, GA

May 2018

**Month and Year
← degree will be
awarded.**

**2-inch bottom
margin**

Copyright Page

The copyright page is the third page of the dissertation and should not be numbered (i.e., it is considered page “iii”). If the doctoral candidate wishes to copyright the dissertation, a copyright page should be included following the title page. The copyright symbol and the copyright holder’s name and year should be included 2 inches from the bottom of the page. The copyright gives you the exclusive right to print, reprint, copy, and sell your work and to prepare derivative works. In other words, it protects you against anyone infringing on these rights. To maintain your copyright, a copyright notice must appear on all copies of your dissertation.

Dedication

The dedication page is included for those doctoral candidates who wish to dedicate the dissertation to someone. The dedication section, if used, pays special tribute to persons who have given extraordinary encouragement or support to the doctoral candidate’s academic career. The dedication page should be titled but not numbered (i.e., it is considered page “iv”).

Acknowledgement

On the acknowledgement page, the doctoral candidate expresses his/her professional and personal indebtedness for assistance, cooperation, and/or support for completion of the dissertation. The author should also use this space to express appreciation for permission to use previously copyrighted material, if any, included in the doctoral dissertation. Acknowledgments should mention whatever assistance the doctoral candidate honestly appreciates (e.g., advice and counsel of the supervising committee chair and/or supervising committee members, financial support, suggestion of ideas, and permission to use source materials). Extravagant praise and insincere thanks should be avoided. Acknowledgments to inanimate objects or animals will not be accepted. The acknowledgements should be written in a dignified and professional manner.

The acknowledgements may be written in either first or third person; just be consistent. The acknowledge page is numbered in lower case Roman numerals (“v”), centered, 0.5 inch above the bottom edge of the paper.

Vita

The doctoral candidate should include a brief vita for the benefit of readers and future researchers, which is usually two pages. The vita page is numbered in lower case Roman numerals (“vi”), centered, one-half inch above the bottom edge of the paper.

Abstract

The final step in reporting the research project is completion of a brief abstract. The purpose of the abstract is to present the significant contents of the manuscript. It consists of (a) a short statement of the problem, (b) purpose of the study, (c) conceptual/theoretical framework, (d) a brief discussion of the methods, participants, and procedures employed by the doctoral candidate, and (e) a summary of the findings of the study. Typically, the abstract will be 350 words. It should be as explicit as possible, carefully compiled, and suitable for publication. The abstract page is numbered in lower case Roman numerals (“vii”), centered, one-half inch above the bottom edge of the paper.

Table of Contents

A table of contents is required for the doctoral dissertation. It is basically a topic outline of the dissertation and is the only index to the content of the manuscript. It must accurately reflect the organization of the dissertation. The table of contents should list the following: acknowledgment, dedication, vita list of tables and figures, abstract, chapter or major sections of the dissertation and subdivisions in each chapter, references, and appendices. Each item listed will have the corresponding page citation. In the table of contents, all levels of subheadings are

reported. There are double spaces between chapter headings and subheadings; subheadings are single-spaced. The doctoral candidate must be consistent in the level of subheading that is indicated. Be sure that the headings in the text match in punctuation and word-for-word and letter-for-letter with the headings listed in the table of contents, list of figures, and list of tables. Capitalization must match exactly. If titles require more than one line, the second and subsequent lines are indented one-half inch and aligned with a tab setting. Page numbers are aligned with the right margin. If the table of contents requires more than one page, subsequent pages begin 1 inch from the top of the page with the heading "Table of Contents (continued)" flush with the left margin. The title of a chapter should be typed using all capital letters. Underlining may be used in the table of contents. Use header dots to connect headings to page numbers. (See [step-by-step directions](#) from Indiana University of Pennsylvania.) Be sure to give page numbers accurately. If titles cover more than one line, text must not run into the page number column.

Lists of Tables and List of Figures

These lists are required when the number of entries in the doctoral dissertation is three or more and include tables and figures in the appendices. The order for these listings is tables, figures, and other illustrations. The consecutive lower-case Roman numeral pagination continues. Each list receives its own page, even if both or all three would fit on the same page. Include the number, caption, and page number of every table and figure in the doctoral dissertation, including the appendices. Entries in the list should be typed single space within entries and with double space between entries. The table and figure number, caption, and page number must be identical to the number, caption, and page number in the list of tables and list of figures.

Chapters I through V

The chapters should be presented in numerical order. The pages should begin 1.5 inches from the top of the page and should first give the chapter designation (CHAPTER II) centered; double space and center the title of the chapter (METHODOLOGY); and double space and begin the text of the chapter. The first page of each chapter should not be numbered, but the second and subsequent pages should be numbered. Begin numbering the doctoral dissertation on page 2 of Chapter I with the number in the upper right-hand corner 4 lines from the top of the page (approximately 5/8 inch).

The doctoral candidate is expected to use appropriate headings and subheadings throughout the doctoral dissertation. The headings and subheadings perform two important functions. First, they help the reader move efficiently through the narrative; but, more importantly, they assist the writer in the logical and orderly presentation of material. There are five heading levels in APA. *The 6th edition of the APA manual revises and simplifies previous heading guidelines.* Regardless of the number of levels, always use the headings in order, beginning with level 1. The exception is that bold font is not used in the doctoral dissertation. Figure 1 presents the format of each heading level for the doctoral dissertation.

APA Headings (with boldface removed)	
Level	Format
1	Centered, Uppercase and Lowercase Headings
2	Left-aligned, Uppercase and Lowercase Heading
3	Indented 0.5", lowercase paragraph heading with a period.
4	<i>Indented 0.5", italicized, lowercase paragraph heading with a period.</i>
5	<u>Indented 0.5", underlined lowercase paragraph heading with a period.</u>

Figure 1. APA headings for the doctoral dissertation.

Figure 2 (below) displays an example of the headings format for the doctoral dissertation. The chapter number and the title of the chapter are typed in all capital letters, centered, and are not considered a header level for the purposes of the doctoral dissertation only.

CHAPTER IV

RESULTS

Description of Research Sample (Level 1 Heading)

Schools (Level 2 Heading)

High poverty, low performing schools. (Level 3 Heading)

Unique descriptors. (Level 4 Heading)

Exceptions for consideration. (Level 5 Heading)

Figure 2. An example of the doctoral dissertation heading format.

References

The reference section must be presented in APA format with only those references actually used in the body of the doctoral dissertation. References should be double-spaced as per

APA guidelines. The reference list at the end of the doctoral dissertation should list all works cited in the dissertation arranged alphabetically by first author's surname, and all items listed as references must have been cited in the dissertation text. Special attention should be given to ensure appropriate citations of less common sources (e.g., unpublished manuscripts). The APA (6th edition) Manual can provide guidance for ensuring accuracy in these details. The doctoral candidate can utilize the *Find* feature in Word to ensure each citation has a corresponding reference.

Appendices

Any additional information pertaining to the research project should be presented here in the Appendices. Specifically, instrumentation utilized in the study will normally be included in appendices. Commercial and other non-original instruments may be included only if written approval from the author or other copyright holder has been obtained. Correspondence and other documentation for the dissertation should be included in this section. Each document should be included following a *separate* appendix page. Each appendix requires a separate title page, beginning with Appendix A. Pages are numbered consecutively following the last section of the text. When there are two or more appendices, the word APPENDICES will appear on the fifth double-spaced line, centered between the margins on a cover sheet; this title is considered a major heading. Each appendix also carries a descriptive title, which will appear in the table of contents. In the case of a single appendix, the word APPENDIX appears as a major heading on the page bearing the title. Observe the same margin requirements as in the text. Title all appendices and list the titles in the table of contents. An appendix is similar to a chapter in format. Each one must begin on a new page, its title must be in all capital letters, and its page numbering is like other chapter display pages.

Tables and Figures

The doctoral candidate should closely check the APA (6th edition) Manual for information and details on the inclusion of tables and figures. APA recommendations must be followed. Tables carry Arabic numerals and are numbered consecutively throughout the text. Figures and other illustrations also carry Arabic numerals. Tables and figures are cited and appear in the body of the text. Figure 3 displays a table formatted using APA (6th edition) style guidelines.

Table 1

Descriptives for Selected Pre-Requisite Quantitative Coursework

Course	<i>n</i>	<i>M</i>	<i>SD</i>
CHEM 1151	78	3.45	0.82
CHEM 1152	77	2.13	0.91
MATH 1111	52	3.17	0.92
PSYC 1101	37	3.49	0.65
STAT 1127	45	3.31	0.70

Note: Students are not required to take the same courses. Substitutes are allowed. The numerical values correspond to a four-point GPA scale.

Figure 3. A table formatted using APA (6th edition) style guidelines (*Source:* Brown & Smith, 2018).

Material that does not directly illustrate the text may be presented in appendices. Tables and figures must be mentioned in the narrative before they are presented in the text. Text material and tables may appear on the same page; however, the doctoral candidate should use reasonable judgment as to the location of narrative material on a page with tables and/or figures. The title of the table will appear at the top of the table. Upper-case and lower-case letters should be used, capitalizing the first word and all other words except articles, prepositions of fewer than four letters, and conjunctions. The titles of the tables are italicized. All table titles should be

self-sustaining, that is, they must be able to stand alone. The table title must be in sufficient detail to permit the table to be displayed and understood without benefit of additional narrative. Figures are handled differently in APA format. A discussion of figure captions appears in the APA Manual. Refer to Chapter 5 (Displaying Results) in the APA 6th edition Manual for more details.

Additional Notes

Several miscellaneous notes are important to the successful preparation and completion of the doctoral dissertation.

Copyright considerations. In order to avoid a violation of the copyright laws, the doctoral candidate must secure permission of the publisher before using in the dissertation any material covered by the copyright laws. These materials include, but are not limited to, figures, maps, tables, quotations, and entire paragraphs that have been duplicated from the original publication. Duplication is not restricted to the physical process of photocopying. Copies that have been traced, drawn free-style, photographed, or duplicated by any means are a violation. When permission of the publisher is required, the consenting letter(s) must be placed in an appendix. An appropriate credit line is given in all textual, tabular, and figure citations, as indicated in the APA Manual. The doctoral candidate should consult the chair of the doctoral dissertation committee when uncertainties arise.

Margins. The left margin of each page must be 1.5 inches in width to permit binding without destroying any of the dissertation content. Top margins of pages bearing major headings are 1.5 inches measured to the top of the characters in the heading. Otherwise, the top margins are uniformly 1 inch measured to the top of the characters. The right and bottom margins are 1 inch.

Line spacing. According to APA (6th edition) style guidelines, the text of the doctoral dissertation is double-spaced, including the reference list. There is one exception (e.g., indented material that is referenced in the text is single-spaced). Each chapter or major section of the dissertation should begin a new page with the appropriate heading.

Pagination. Except for the Dissertation Approval Page, every page in the dissertation is assigned a number, although not every page has its number typed on it. Lower-case Roman numerals are used for pages in the preliminaries, while Arabic numerals are used for all other pages of the dissertation. The initial page of each major division of the document (e.g., first page of a chapter) will be numbered, but the number will not appear on the page. Top page numbers shall be placed uniformly on the fourth line (approximately 5/8 inch) from the top of the paper, aligned with the right-hand margin. They will be free-standing (without accompanying word or symbol). Preliminary pages must be numbered at the bottom center of the page and 0.5 inch from the bottom edge of the paper. Begin the dissertation text numbering with Arabic “2” (on the second page of Chapter I) and continue consecutively to the end of the manuscript, including References and Appendices. Figure 4 provides a summary of pagination guidelines for the doctoral dissertation.

Pagination Guidelines for the Doctoral Dissertation	
Component	Guidelines
Dissertation Approval Page Title Page	<ul style="list-style-type: none"> • Lowercase Roman Numeral • starting with i • assigned, not typed
Copyright Dedication Acknowledgement Vita Abstract Table of Contents List of Tables List of Figures	<ul style="list-style-type: none"> • Lowercase Roman Numeral • starting with iii • centered • 0.5 inch from bottom margin
Chapters I, II, III, IV, & V References Appendices	<ul style="list-style-type: none"> • Arabic Numerals • starting with 1 • flush with right margin • 5/8 inch from top margin • (suppress page numbers for first page of chapters, references, and appendices)

Figure 4. Summary of pagination guidelines for the doctoral dissertation.

Paragraphs. The required indentation of paragraphs is 0.5 inch. A new paragraph shall not begin at the bottom of the page or at the top of the subsequent page unless there is adequate space for at least two lines (i.e., widow and orphan rule).

Writing Guidelines

The doctoral candidate will sit down at the computer, go through his or her notes, and, in a few hours, produce a piece of research writing. Correct? Wrong! It is impossible to start from nothing and produce a good piece of writing; it is very hard to organize the material and write at the same time.

Plan the Writing

Before starting to write, find a way to organize the materials so that you know what to write about and in what order. Write an outline. When planning the writing, do not worry about the language. Concentrate on what is being written. Write in notes so that there is no worry about verb agreement. Do not waste time worrying about spelling. All of these aspects of writing can be dealt with after getting the initial ideas down. Do not put a lot of effort into proofreading until you are sure that what is being written is the best, and then time can be spent on editing the writing so that the punctuation, spelling, etc. are correct.

Write and Rewrite

More experienced writers rewrite more times and more substantially than less experienced writers. Good writing takes time for everyone. The better a writer one becomes, the more the first thoughts/ideas/writing that come out of one's head and onto the page can be improved. Provide time to rewrite so that the readers see the best thoughts and writing.

Find Readers

Ask people to read what has been written. Ask friends or others, but do not wait until the writing is "perfect". If people suggest changes after it is "perfect", one is less likely to make them! Give people drafts and let them read!

Keep Writing

Good writing takes practice. The only way a person become a better writer is for himself or herself to write on a regular basis (i.e., practice), show the written work to other people, and *rewrite, rewrite, rewrite*. There is no one right way to write so find what way works individually. The key is to write regularly. Doctoral candidates should find the same time each day and write. For some candidates, that time is 6 am, and that time is 10 pm for other candidates. Whatever the time, try to be consistent. Over time, the thought process and writing will improve in quality and quantity.

General Suggestions

1. **Feedback.** Be prepared for extensive comments on any writing draft. The feedback from the readers will help you strengthen your written document and should not be taken as a personal attack. Rather, the writer should be thankful that someone took the time and effort to read and critique the writing. Make the corrections requested, learn from the mistakes, and do not make the same mistakes again.
2. **Be patient.** The old adage of “Rome not being built in a day” is appropriate. Do not try to rush the process! Work with the chair of the doctoral dissertation committee to improve the product. Please understand that the dissertation cannot be written in a couple of weekends. Set a realistic timeline for completing the dissertation and stay on target. The doctoral dissertation committee does not work on the candidate’s time schedule so please allow more than sufficient time for them to read, critique, edit and provide feedback. Meetings should be scheduled at least 2 weeks in advance to accommodate everyone’s schedule.

3. **Ask for help.** The chair, methodologist, and other committee members are available to assist. They will not and should not do the work, but they can serve in a variety of capacities to help successfully complete and defend the dissertation.
4. **Document.** Be sure to include references that document familiarity with the research literature. If in doubt, document. Remember that most people have very few original thoughts. Thoughts and ideas have been shaped by interactions with others. Therefore, it is important to give credit to the individuals who have influenced those thoughts and ideas. Always document and give authors credit for their research and in shaping the ideas. All chapters should be documented and referenced, which means Chapters I, III, IV, and V should also contain references, particularly Chapter III. Make sure to reference all the materials concerning the methodology.

Academic Dishonesty

Copying more than four consecutive words without proper citation can be considered plagiarism and, therefore, academic dishonesty. Academic dishonesty includes, but is not limited to, the following:

- a. cheating on assignments or exams, including cheat sheets or other unauthorized materials,
- b. copying from peers, or knowingly and willingly permitting or assisting others to copy from one's own exam or other assigned work,
- c. plagiarizing, which includes the undocumented use of quotations, ideas, or the paraphrasing of the ideas of others and presenting them as one's own,
- d. the submission of research papers that are not the product of the student's own efforts.
- e. submitting materials more than once (self-plagiarism).

All information attributed to another author should be properly documented and referenced. The rule of thumb is to make sure that any thought that belongs to someone other than the writer is appropriately documented. Any material that is a direct quote from another author must be enclosed in quotation marks or set apart in the text. Paraphrased material must also be referenced. Always give credit where credit is due! Claiming the exact words, paraphrases, ideas, arguments, or thoughts of another as your own is plagiarism, and Columbus State University policies may require disciplinary action (including dismissal) and/or grade adjustments for this offense. Quotation marks should be used to indicate the exact words of another. *Each time* you paraphrase the words of another (e.g., summarizing passages, rearranging sentence order, or changing words), you should credit the source in your writing. The rule of thumb is that more than four consecutive words constitute plagiarism.

Guidelines for Formal, Technical Writing

Formal, technical writing is different from the writing used by most educators. The writing is focused on communicating materials in a competent, concise, and clear style using the most efficient means possible using a well-organized and well-documented manner. This type of writing is not about “flowery” writing that one might find in a magazine article.

1. Do not use contractions.
2. Do not use “I believe,” “I think,” “I feel,” nor “researchers believe,” “researchers think,” or “researchers believe.” Technical writing is reporting the research, not supposing what researchers believe.
3. Do not give animation to inanimate objects. Educators and leaders have acted, but the organization or school has not. Researchers have reported . . . - not, “research has demonstrated,” “researchers proved,” or “the data showed.”

4. Do not use “today,” or “currently.” If a date must be given, be time specific. Ten years from today when someone reads the work, it will not be “today.”
5. Be very careful about using words like *should* or *must*. As a doctoral candidate, one cannot impose his or her opinion on anyone else. If you already know what someone must or should do, a bias is showing, and there is no reason to conduct the study. The answer is already known.
6. Do not use indefinite personal pronouns (e.g., me, my, our, we, us, them, they, or it). Who is “we”? Be definitive, and use researchers, leaders, or writers.
7. If you use the term “researchers”, you must have plural references.
8. Nothing in the dissertation is **bold**.
9. Use past tense and third person. Make sure to have consistent verb tense throughout the document, particularly from chapter to chapter. Typically, the methods discussed in Chapter I will be written in future tense for the dissertation prospectus and dissertation proposal, but the verb tense will be changed to past tense after the study has been conducted. Chapter II will be written in past tense always. Chapter III will be written in future tense for the dissertation prospectus and dissertation proposal, but the verb tense will be changed to past tense after the study has been conducted. When the dissertation is ready for final defense, the entire dissertation must be written in past tense.
10. Be consistent. If the word “teacher” is used to describe the population in the first paragraph, use “teacher” throughout the document. A dissertation will be redundant.
11. Limit direct quotes. Paraphrase. A doctoral dissertation is not a *collection of quotes*, but rather the reporting and paraphrasing of what has been read in one’s own words.

12. Limit the use of acronyms and jargon. Be sure to spell out, or define, the first time an acronym is used in the text. After defining the acronym, utilize that acronym throughout the document. Make sure that any jargon is explained correctly and accurately.

Remember, a reader may not know the acronym or jargon.

13. “Data” is always plural (e.g., data are...).

14. Do not use secondary sources. For example, do not quote, “Smith and Jones, as cited in Jones and Smith (2007) . . .” These sources should be utilized to locate primary sources.

15. Use active voice as much as possible.

16. Do not use colloquial or ambiguous words.

Dissertation Prospectus

The dissertation prospectus is a substantial review and critical analysis of the literature on a topic. The review is both descriptive and evaluative of an area of inquiry of scholarly work conducted in the past. The review generally identifies an emphasis on a topic, theme, or point that evolved as a result of analysis of literature. Typically, a research question has been proposed to guide the review. The review is a report of primary or original scholarship of mostly written documents. It is not a summary of the literature, but a thoughtful and comprehensive analysis and synthesis of the literature.

The dissertation prospectus is designed to provide the doctoral dissertation committee with information comparable to, or greater than, that obtained from comprehensive doctoral examinations. With the dissertation prospectus, the committee can make judgments about the quality of the doctoral candidate's content knowledge while providing the doctoral candidate with an excellent beginning to the dissertation. Therefore, the dissertation prospectus must demonstrate that the doctoral candidate has technical mastery of subject and knowledge of research techniques sufficient enough to carry out independent, significant scholarly work that will be a meaningful contribution to knowledge and practice in education. The doctoral candidate must also demonstrate high standards for quality investigation of the literature and knowledge base. In addition, the dissertation prospectus must reflect a problem, issue, or study that is compatible with the specialization area of the doctoral candidate.

In consultation with the dissertation chair and committee members, the doctoral candidate will write a dissertation prospectus consisting of the statement of the problem, the research question(s), the literature review, and references. Throughout the writing process, the doctoral candidate must work closely with his/her doctoral dissertation committee. The dissertation

prospectus must be submitted to the committee members at least 2 weeks prior to the scheduled prospectus defense. No further work on the dissertation should be undertaken by the doctoral candidate until the dissertation prospectus is defended successfully and approved by all members of the doctoral dissertation committee. This procedure protects the interests of the doctoral candidate, doctoral dissertation committee members, and the University.

The doctoral candidate should remember that the primary purpose of the dissertation prospectus is to convince the doctoral dissertation committee that the doctoral candidate is familiar with the literature in the area to be researched and that this proposed research will fill a gap. The proposed research should advance the current theoretical literature, empirical literature, and knowledge base meaningfully and uniquely. An additional consideration for the prospectus is that the doctoral candidate has outlined a research topic and agenda that can be completed and that will make a contribution to the knowledge base of curriculum studies and/or educational leadership. The dissertation prospectus (i.e., Chapter I and Chapter II) typically will be from 75 to 100 pages in length.

The doctoral candidate should include a title page and initial Table of Contents at the beginning of the dissertation prospectus and a Reference section at the end of the dissertation prospectus. In addition, it is very helpful to the doctoral dissertation committee and to the doctoral candidate if a tentative timeline is discussed during the prospectus defense.

Chapter I Introduction

The first chapter of the doctoral dissertation provides the setting, context, rationale, importance, and practical or theoretical foundation for the study. As a general guide, the language should reflect *future or present tense and third person*. (This decision should be made by the doctoral dissertation committee). Chapter I will serve as a portion of the prospectus for a research study to be approved by the doctoral dissertation committee. Chapter I is, therefore, the most important chapter of the doctoral dissertation because everything else in the research builds on the base established in this chapter; however, Chapter I is written after the literature has been reviewed and understood to provide a reason and rationale for the research. This chapter should be arranged in the following order to justify why the research should be conducted:

- | | |
|--|------------------------------|
| 1. Introduction | 5. Significance of the Study |
| 2. Statement of the Problem | 6. Research Questions |
| 3. Conceptual or Theoretical Framework | 7. Methodology |
| 4. Definitions of Terms | 8. Limitations/Delimitations |
| | 9. Summary |

General Information

This section should begin by framing the study in the “*larger context*” of education. This doctoral degree is in education and *must* have education as the research focus. The length and depth of this section will vary depending on the nature and topic of the study. Sufficient coverage of the literature should be presented here to acquaint the reader with the topic and the importance of the topic. A more thorough literature review will be presented in Chapter II; in fact, the literature report here is a synthesis of the review of relevant literature reported in

Chapter II. The general introduction is an overall synopsis of the literature review presented in Chapter II. Remember to *document thoroughly* the information and research presented in this section. Very few researchers have original thoughts or ideas. Therefore, it is imperative to give credit, particularly in formal writing, to the source(s) of thoughts or ideas.

The general introduction prepares the reader for the statement of the problem to follow and should be written *concisely to prepare the reader for the problem thoroughly*. The writer should visualize that the introduction moves from the macro to the micro perspective. That is, the writer should set the study in the large context of education then successively move to the small point of where the study fits in that larger context. The micro concept forces the writer to *identify the “hole in the literature” or the specific need graphically*, which the study will address. Sequentially, this identification leads the writer to the next step, the statement of the problem. Be careful of reliance on only two or three major researchers in the Introduction! Use multiple researchers. Be sure to indicate the opposing forces related to the research topic. The Introduction should set the stage for the research and logically have a “grabber” comment.

Statement of the Problem

In this section, the doctoral candidate must be able to convince the doctoral dissertation committee of the validity, viability, and importance of the dissertation topic. The topic must be framed in a manner that will facilitate conducting the study and lead to responsible results. The problem must be clearly, meaningfully, and logically structured. The responsibility of the doctoral candidate is to convince the doctoral dissertation committee and, ultimately other readers, that there is a readily discernible problem to be researched. In other words, this section must answer the question: *What is the problem that is being researched and why does the problem exist?*

As a doctoral candidate, one may have an idea, maybe even a topic; however, if the problem cannot be well articulated, there is nothing on which to build a dissertation proposal. The doctoral candidate should be able to articulate clearly the void in the literature or the knowledge base that will be filled by the completion of the dissertation research. *If there is no void, or if there is no significant problem to be addressed, there is no need for the dissertation.* The responsibility of the doctoral candidate is to convince the doctoral dissertation committee of the need to complete the study by clearly, concisely, and coherently describing the problem to be researched. There are six characteristics of an educational problem.

1. The problem must be “real” and very specific within the framework of education.
2. The magnitude of the problem must be sufficient to justify dissertation research.
3. The problem must be “measurable” to some extent.
4. Must answer the "So what?" question.
5. The problem must function within the context of education.
6. Make sure the topic is doable.

A three-step process for delineating the problem statement will provide structure for the section. First, answer the question, “*What is known about the topic?*” Second, answer the question, “*What is not known about the topic?*” Third and lastly, answer the question, “*What does the researcher want to know about the subject?*” In other words, what is the relationship between the known and the unknown that the researcher desires to answer? These answers will lead directly to the next section because the statement of the problem section should end with a purpose statement (e.g., “Therefore, the researcher purposes to . . .”).

Conceptual or Theoretical Framework

Theoretical Framework. A theoretical framework refers to a specific theory that a doctoral student chooses to guide the dissertation research. Imenda (2014) defines a *theoretical framework* as “the application of a theory, or a set of concepts drawn from one and the same theory, to offer an explanation of an event or shed some light on a particular phenomenon or research problem” (p. 189).

Conceptual Framework. A doctoral student may decide to synthesize theoretical and empirical literature. This synthesis is referred to as a conceptual framework, which could be used instead of a theoretical framework. Imenda (2014) defines a *conceptual framework* as “an end result of bringing together a number of related concepts to explain or predict a given event, or give a broader understanding of the phenomenon of interest – or simply, of a research problem” (p. 189). A conceptual framework derives from concepts, and a theoretical framework derives from a theory. For the conceptual framework, a graphic should be presented to depict the anticipated relationships among concepts for the doctoral student and doctoral dissertation committee. (See Figure 5.)

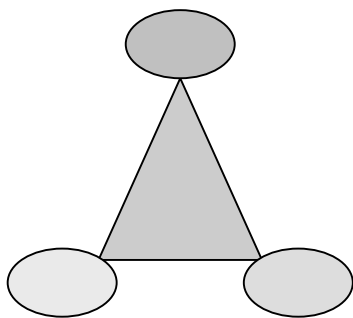


Figure 5. Conceptual Framework graphic example.

Definition of Terms

The doctoral candidate should define the special terms used in the study. General, generic educational terms need not be included; however, any term, which has a special

definition for the study or any term used differently from conventional literature, should be included in this section. In addition, any terms that are unique to the subject of the research should be included. The doctoral candidate is cautioned about the use of educational jargon that is not always known to doctoral dissertation committee members from other disciplines.

Definitions should clarify any word, term, or concept that may have multiple meanings. If you use direct quotes, be sure to reference appropriately. Also, if you use the thoughts and ideas of others to frame your definitions, be sure to provide credit in the way of references. Definitions tend to be reported as lists.

Significance of the Study

The doctoral candidate should describe why the study is important: (a) for the clientele or the population that will answer the questions of the research, (b) for the curriculum and/or educational leadership profession, (c) for the improvement of educational organizations, and/or (d) for the benefit of society. The doctoral candidate should also include a section that specifies why the proposed research is important to the doctoral candidate. What makes this study important to the doctoral candidate, to the university, to the profession, and/or to society? Why is the study sufficiently compelling to justify the time, effort, finances, and human resources that are to be committed? Simply, what makes this study unique? What is the purpose of the study? What does the doctoral candidate wish to accomplish? Who will be benefited by the completion of this study? If there are no beneficiaries, there is no need for the research. There is a logical tie between this section and the “Implications” section of Chapter V. If an individual or group is identified as being important in this section of Chapter I, they should also be addressed in Chapter V. *Remember, there are no references in the Significance section.*

Research Questions/Hypotheses

This section may be written as either research questions or hypotheses, depending on the type of study and the preference of the doctoral dissertation committee chair. Typically, hypotheses are used for experimental, quasi-experimental, causal-comparative, and correlational studies only while “research questions” are more appropriate for most of the research conducted in education. What are the questions that bring the doctoral candidate to this topic? The doctoral candidate is cautioned that the most important aspect of the dissertation is deciding in this section, “What do I really want to know?”, “What are the questions that the research will attempt to answer?”, and “What are the preliminary hypotheses concerning the possible outcomes of the research?” The following prompts outline the criteria for developing research questions.

1. Proposed question(s) should be “smart”

Specific

Measurable

Attainable

Realistic

Timely

2. Overarching question
 - a. Contains all descriptors.
 - b. Written as succinctly as possible.
3. Developing Research Question(s)
 - a. Based upon interest (What to you desperately want to know?)

- b. Feasibility (Is the proposed research doable?)
 - c. Ethics (Is the research ethically doable?)
4. Research Design
- a. What is the question to be answered? What does the researcher want to learn from this research? What is driving the researcher to ask this question?
 - b. Who will answer this question (participants)?
 - c. What information/data will these sources provide (data collection)?
5. Research Questions Format
- a. Must be written in “doable” terms
 - b. “To what extent . . .”
 - c. Cannot be written to be answerable with “yes or no.”
6. Hypothesis Format
- a. Must include the phrase “statistically significant”.
 - b. Must include the variables used to measure the constructs defined in the research question(s).
 - c. Must include the unit of analysis (e.g., students, teachers, or faculty).

The research questions section should build upon the one overarching question presented in the statement of the problem and then should expand to the specific questions the research is intended to answer. No question should be listed here that will not be addressed by the research. This section states the research questions that will guide the research study. No references are permitted in this section. Following the listing of the sub-questions, the doctoral candidate may phrase the concluding comments as, “Therefore, the researcher hypothesizes that...” or,

“Therefore, the researcher proposes to . . .”. The following 10 guidelines summarize the research questions development process.

1. Do not write research questions that can be answered by a simple "yes" or "no."
2. Research questions should be written as specifically as possible yet stated concisely and succinctly.
3. Research questions should be presented in numerical lists.
4. Research questions should flow naturally from the information (Introduction) preceding them.
5. Research questions should be written as sentences, not phrases.
6. Research questions should not contain or give evidence of research bias.
7. Most qualitative dissertations use a research question and not a hypothesis.
8. A hypothesis can be used when relationships are examined; however, as a general rule, education dissertations are not experimental and research questions are used, not hypothesis.
9. One overarching research question should guide the research study.
10. Supplemental, supporting, or sub-questions should be directly tied to the overarching question.

Methodology

What are the research methods suggested by the researcher? What research design will be selected? Why should the research be conducted utilizing the method selected? What qualitative research techniques, quantitative statistical analysis methods, or mixed methods will be used? How will the data be collected? How will the data be analyzed? What are the characteristics of the population and/or sample for the study? This section should be logically

and succinctly stated because it becomes the basis for Chapter III. Are the procedures quantitative, qualitative, or a combination of the two? What are the justifications for using the selected procedures? This section should be concise but thorough because doctoral dissertation committee members are intensely interested in this section of the dissertation. The procedures to be utilized to conduct the study are critical to the success of the research. This section should be thoroughly documented to demonstrate to the doctoral dissertation committee that the doctoral candidate is versed in the research methods sufficiently and able to conduct the proposed research. Although this section will be expanded and ultimately will become Chapter III, a brief methodology section should remain in Chapter I to help set the stage for the research.

Limitations/Delimitations

Limitations refer to the circumstances, environment, and/or setting, which might impact the study negatively. Limitations could be as varied as the methodology used or the population of the study. The doctoral candidate should be careful to define all the possible limitations of the study in order to provide additional justification for conducting the study. List only the major assumptions that drive the research or may influence the outcome of the dissertation. What positions are assumed before the research begins? What are the assumptions concerning the subjects of the research? What are the beliefs of the researcher that may impact the study? What assumptions are made about the procedures to be utilized? Could the limitations affect the anticipated results of the study? *Delimitations* refer to those conditions or elements that make the study possible. Delimitations are not always present, but they should be enumerated if their presence might impact the research, especially the research design.

Summary

Chapter I should conclude with a clear, concise restatement of the major elements of the chapter. For example, the statement of the problem should be restated briefly as well as the importance of the study and how the study will be conducted. The summary should be self-sustaining; that is, it should provide the reader with a focus for the study. No references should be included in the summary because it is a summary by the doctoral candidate of the work in Chapter I.

Reference

Imenda, S. (2014). Is there a conceptual difference between theoretical and conceptual frameworks? *Journal of Social Sciences*, 38(2), 185-195.

Chapter II Review of Literature

Chapter II of the dissertation prospectus, and, eventually the doctoral dissertation, is a report of the research and literature specifically related to the research topic. It is imperative that a comprehensive review of all relevant literature on the topic be completed before data-gathering methods are designed. This review helps to avoid duplication of past research and address weaknesses of past instruments. With few exceptions, the review of related research will rely primarily on current references, typically within the past 5 years. This guideline helps to ensure that the research conducted on the topic is the most current research available. In many dissertations, however, classic works, particularly if a historical documentation of the topic is used, may also be appropriately included and referenced. Additionally, for topics with little to no current research, studies older than 5 years would need to be included.

A literature review surveys scholarly articles, books, and other sources (e.g., dissertations, conference proceedings) relevant to a particular issue, area of research, or theory, providing a description, summary, and critical evaluation of each work. The purpose is to offer an overview of significant literature published on a topic. Similar to primary research, development of the literature review requires four stages:

1. Problem formulation—which topic or field is being examined and what are its component issues?
2. Literature search—finding materials relevant to the subject being explored.
3. Data evaluation—determining which literature makes a significant contribution to the understanding of the topic.

4. Analysis and interpretation—discussing the findings and conclusions of pertinent literature, identifying the gaps in the literature, why is it important to fill that gap, how filling that gap will lead to enhancement in current theoretical, empirical, and/or knowledge of the research topic, and how the current study will fill the gap.

Chapter II should be arranged in the following order: Introduction, headings related to topic from broad to more specific, and Summary.

Purpose of the Literature Review

A literature review is both descriptive and evaluative of an area of inquiry of scholarly work completed in the past. The review generally identifies some topic, theme, point that the researcher wants to emphasize. The review is a report of primary or original scholarship of mostly written documents. It is not merely a summary of the literature, but a thoughtful and comprehensive analysis and synthesis that places the topic in the context of work in the field. A good review results in a synthesis of the literature placing the topic in an updated context of established work in the discipline.

Conducting a literature review, including the processes of searching, reading, interpreting, analyzing, critiquing, integrating, and summarizing knowledge in an area of study, serves several purposes both in one's degree program coursework and in one's professional role. Among these purposes are developing professional-quality writing skills; using computer software and hardware applications as tools in personal and professional environments; strengthening information literacy skills in identifying, locating, evaluating and using relevant information; advancing critical thinking skills, particularly in the areas of analysis, integration, evaluation, synthesis, and generating new knowledge; critiquing scholarly literature, including

theoretical and empirical literature (current theories and research in a field) as well as methodological research. The review of literature section has three primary purposes:

1. To demonstrate to the reader (at the proposal stage, your doctoral dissertation committee; at the dissertation stage, any interested professional) that the researcher knows what he/she is talking about,
2. To educate the reader on what prior research has been conducted in the problem area,
3. To provide the basis for conceptual/theoretical framework, research design, and data analysis plan of the study. Thus, the literature should not simply be reported, but subjected to a critical analysis.

The review of literature should include discussion of the following points.

- Describe in detail the background or context of your study in terms of the issues themselves and related research.
- Discuss and describe the financial, legislative, organizational, and political context of the problem area in detail.
- Discuss the results of prior related research studies; compare and contrast these studies.
- Provide a literature-based rationale for the choice of concepts and theoretical frameworks employed in your study
- Discuss the rationale for the choice of variables, research methodologies, and definitions to be used in your study,
- Discuss the rationale for any hypotheses/research questions to be tested.
- Provide a summary of the review of the literature, particularly with emphasis on those studies that most influenced your research design. Point out the areas of the literature on your topic area where the research is weak or lacking altogether (i.e., gaps).

Additional considerations include:

1. Demonstrate to the reader that you have a comprehensive grasp of the field and are aware of the important historical and recent substantive and methodological developments regarding your research topic.
2. Delineate the "jumping-off place" for your study: how will your study refine, revise, or extend what is now known (fill the gaps!)?
3. Examine and discuss prior research studies with several purposes:
 - a. What were the results of the prior research studies; specifically: what did they find? How is that study similar to or different from other studies? You do not want to do the same study that has already been done unless you have a good reason. How will your study be similar? More importantly, how will it be different?
 - b. What was the research design, sampling procedures, sample size, and data analysis procedures of the prior studies? How are they similar or different? Is there a "standard" research design that has been used? What variables did other studies use? What are the variable operational definitions? Did they use the appropriate statistical analysis? Did they conduct the analysis appropriately? Critically discuss the research design and data analysis procedure of the study and evaluate the usefulness of the results of the study.
 - c. Avoid statements that imply that little research has been conducted in the area or that what research has been conducted is too extensive to permit easy summary. Statements of this sort usually are taken, and often rightly, as indications that the researcher is not familiar with the empirical literature.

The literature review should answer the following questions:

1. What is already known about the immediate area concerned?
2. What are the characteristics of the key concepts or the main factors or variables?
3. What are the relationships between these key concepts, factors or variables?
4. What are the existing theories?
5. Where are the inconsistencies or other shortcomings in knowledge and understanding concerning the topic?
6. What views need to be (further) tested?
7. What evidence is lacking, inconclusive, contradictory or too limited?
8. Why study (further) the research problem? Does it deserve further study?
9. What contribution can the proposed study be expected to make?
10. What research designs or methods seem unsatisfactory?

The literature review serves several important functions:

1. Ensures that the doctoral candidate is not "reinventing the wheel."
2. Gives credit to those who have laid the groundwork for the research.
3. Demonstrates the doctoral candidate's knowledge of the research problem.
4. Demonstrates that the doctoral candidate understands the theoretical and research issues related to the research question.
5. Shows the doctoral candidate's ability to critically evaluate relevant literature information.
6. Indicates the doctoral candidate's ability to integrate and synthesize the existing literature.

7. Provides new theoretical insights or develops a new model as the conceptual framework for the doctoral dissertation.
8. Convinces the reader that the proposed research will make a meaningful and substantial contribution to the literature (i.e., resolving an important theoretical issue or filling a major gap in the literature).

Writing Tips for the Literature Review

1. Consult the APA (6th edition) manual frequently.
2. Remember to add literary sources to the reference list in appropriate APA format as the paper is developed. Do not leave this task to be completed at the end!
3. Paraphrase as much as possible and avoid long strings of quotes. The doctoral candidate may want to get in the habit of paraphrasing as the material is entered on a Word file, but quotation marks must *always* be used when directly quoting and page numbers when directly citing material. Try to synthesize not just paraphrase.
4. Write in past tense.
5. Avoid using “first person” (I, me, we), and use gender-free language. Rather than he/she, indicate “they”.
6. In the literature review, the writer is reporting objectively what is published previously. Exclude personal opinions, conclusions, or recommendations.
7. Read and write carefully. Distinguish between an author’s theorizing and suggesting versus the author’s research findings. For example: *Smith (2002) suggested.....* versus *Smith (2002) reported that . . .*
8. In presenting results from empirical studies, methodological studies, and case studies, be careful not to use terms such as *Jones (2001) proved . . .* “Proof” is extremely

compelling evidence of some test of the truth, validity, or genuineness. As a rule, social science research results are *tentative*. One may say: *researchers supported*, *researchers provided evidence that . . .*, *researchers suggested . . .*, or *the researcher confirmed or disconfirmed. . .*

Start the Literature Review Process by Selecting a Topic

The topic area may come from identification of practical problems or patterns of incidents observed from one's own work experience or problems/issues identified from seminars, workshops, discussions with professionals, or reading future research recommendations within journal articles and/or previous research dissertations or theses. The doctoral candidate may want to explore more about a commonly used technique, strategy, or intervention. He or she may be skeptical about some aspect of the information or knowledge about a topic. Perhaps, there is interest in reviewing factors associated with variations in certain outcomes (educational outcomes, productivity, or job satisfaction). Doctoral candidates with theoretical inclinations may be interested in further exploration of concepts (and relationships between the concepts -- or propositions) within a given theory. There may be awareness of inconsistencies in the literature regarding some particular topic, disputed or contradictory statements, and incomplete evidence or dated reports. Alternative explanations for certain relationships may be revealed in the literature. These issues may raise doubt and uncertainty. Conceivably, the "discussion" section of a study that is reviewed may have identified "gaps" or potential areas for future study. Think about *the problems* in education, the *processes* in education, and the *practices* in education. Typically, one's interest in a topic is really a formulation of a research question about the topic. Initially consider several topics. It is suggested that one conduct a brief library search first to see what research has been conducted.

A doctoral candidate may have selected a topic where there is little or no research or theoretical formulations about the topic. Perhaps the area has been extensively studied, and the answers to questions about the topic are already available. The doctoral candidate should try to find at least one “scholarly” article that is helpful *before* submitting the topic for approval. The topic will most likely need to be kept fairly narrow to make sure the research is doable and manageable. The topic should also be of interest to the doctoral candidate. The following basic steps are suggested.

1. Collect appropriate articles, read critically and think about the best way to present the topic.
2. Build (draw) a visual picture of the concepts – sub-concepts, author with year, which is a *literature map*.
3. Distinguish between the major classifications of literature obtained (i.e., theoretical and empirical literature). Also, recognize other scholarly literature, including review articles, methodological articles, and case studies.
4. First, read the easier, more current, and most closely related literature to the topic.
5. For theoretical literature (appearing in the literature review section of an empirical study, or appearing in an article or book that describes a theory)
 - a. Identify major concepts, themes, conceptual frameworks, conceptual model, and theories presented
 - b. How has the theory been applied?
 - c. What are discussions (i.e., conclusions, interpretations, and recommendations) pertinent to the topic?

- d. Look at the list of references in this literature to see if there is something of interest.
6. For original empirical studies, briefly review the abstract to determine relevance, the introduction (i.e., researcher's purpose, problem, key literature, conceptual/theoretical frameworks, and hypotheses), methods, the tables/graphs in the results (i.e., the findings) and the discussion (i.e., conclusions, interpretations, and recommendations). Label these components much like in the research critique. If there are strengths or weaknesses that “pop out”, document these strengths or weaknesses within the article. Look at the list of references to see if there is something of interest.
 7. The more one reads scholarly literature, the better writer one will become. A good writer has read many examples of the relevant topic in scholarly and refereed journals.
 8. Types of research literature used in Chapter II of the prospectus and the doctoral dissertation
 - a. *Empirical* (presentation of data)
 - b. *Primary* (scholarly or presentations)
 - c. *Secondary* (references or quotes from other publications)
 - d. *Essay* (enlightened summary)
 - e. *Descriptive* (narrative description)
 - f. *Experience* (report of experience or information based upon experience)
 - g. *Expository* (report of experiences or dramatic presentation)

Searching the Literature

A good review of the literature is dependent upon knowledge of the use of indexes and abstracts, the ability to conduct exhaustive bibliographic searches, and ability to organize the

collected data meaningfully. Other skills needed include (a) Information literacy skills retrieval methods and scholarly communication, (b) Recognition of scholarly and peer reviewed journals, (c) Identification of concepts, themes (key words) or descriptors, and (d) search the relevant databases for research on the topic. Focus the search on *primary* scholarly works, including empirical, theoretical, critical/analytic, or methodological inquiry. Review dissertation abstracts. The doctoral candidate should read the dissertation abstracts before requesting the materials because certain abstracts may provide enough information to help you decide on the material's relevance. Search GALILEO database, e-journals, and other online resources located in CSU library. Schedule a research consultation appointment with CSU Librarian for COEHP, Michelle Jones (jones_michelle@columbusstate.edu). Discuss literature review with your Doctoral Dissertation Committee to ensure you are on the right track.

Introduction to Literature Review

The doctoral candidate is encouraged to provide a short synopsis of the corpus of the research topic. This short synopsis is important to link the material in Chapter I to the literature review in Chapter II and to provide the direction for Chapter II. Often, the Summary from Chapter I will provide the stimulus for the Introduction in Chapter II, not directly quoted, but used as a means of identifying the research topic. How and why was the topic chosen for research? The following steps outline how to create a literature review.

1. Frequently review the guidelines for the literature review, including Critical Reading, Interpreting, Analyzing, Critiquing and Organizing. Some information included here is new, some may be repeated, and not all of the information presented in the guidelines is repeated here.

2. Organize in a logical, meaningful and orderly manner. Use frequent APA level subheadings to connect main ideas and topics covered in a logical sequence (see APA publication manual for examples). Follow the organization that was described in the introduction to the literature review (be consistent).
3. Generally, related articles and research findings should be presented together.
4. Report areas of agreement and disagreement.
5. Only a little space should be used to report minor studies. As possible, group together minor studies that have similar results, methodologies, strengths and/or weaknesses.
6. Discuss major studies in detail. It is appropriate to present major studies or seminal writings individually in more detail. Describe strengths and weaknesses of methods used in important studies so that readers have enough information to weigh the results and draw their own conclusions.
7. During writing, the doctoral candidate will need to integrate and synthesize the results in some logical manner.
8. There is no need to report everything that is read. When reading and evaluating the research studies for possible inclusion in the review, one should determine the relevance, worth, and significance of studies to the topic.
9. A good review of the literature is more than simply a *summary* of the research. It is both a *critical* evaluation of the existing research and a *synthesis* of that work. One will need to synthesize the literature in some logical manner. This is a skill that develops with practice. As things are written down, they should be reviewed to see if they are being integrated, evaluated, and synthesized. Are opposing views, contradictory findings, gaps

in the literature (what questions are being suggested), etc., being identified? Is clarity being brought to the research issues?

10. While summarizing, the doctoral candidate will also be analyzing, critiquing and relating each literature source logically to a concept or theme related to the area of inquiry.

Meaningful ways to organize the review will emerge.

Discussion of Research

Essentially, in this section, the doctoral candidate briefly summarizes major literature and how it guides professional practice, theory or conceptual development, integrating major concepts, research status, evaluation of the state of the literature, identifying major gaps in the literature, and recommending pertinent areas of future study. The literature review of Chapter II must be a synthesis of major concepts/issues in the field or area of study. It is *not* a reporting of individual studies in sequence. Doctoral candidates are also cautioned about over-reliance on excessive direct quotes or disproportionate reliance on a limited number of authors/researchers. Although some quotes are essential and needed to make the point of the research, excessively lengthy quotes diminish from the quality of the work and give the impression that the doctoral candidate is not able to articulate the point without relying on someone else's words. Direct quotes of more than 40 words must be indented in the text of the doctoral dissertation.

Unfortunately, most doctoral candidates' literature reviews suffer from the following problems:

- a. Lacking organization and structure
- b. Lacking focus, unity, and coherence
- c. Being repetitive and verbose
- d. Failing to cite the most influential research

- e. Failing to cite the most recent research
- f. Failing to critically evaluate the cited research
- g. Citing irrelevant or trivial references
- h. Depending too much on secondary sources

There are four primary criteria for determining the adequacy of the review of literature:

1. Does it contain enough information to inform and enlighten the reader?
2. Is it clear in every regard?
3. Is it correct in style and accuracy?
4. Is it as concise as possible while meeting the complete and comprehensive criteria?

High-quality material in the literature review. The doctoral candidate is cautioned about the use of extraneous material for filler in Chapter II. The doctoral candidate should use only material that has relevance and bearing on the research topic, problem statement, and research question(s). The doctoral candidate should be as succinct as clarity and thoroughness will permit. The doctoral dissertation is a study in form and format and not a product of passion. The literature review should contain all the information that will impact the dissertation. Often, particularly in qualitative studies, the doctoral candidate will be forced to revisit Chapter II during the writing of Chapter V where the research is compared to the literature. Therefore, the best advice is to be as complete as possible in reporting the literature. Chapter II should be a reporting of the topics and not a rehash of what each researcher reported. As a general rule of thumb, sentences should begin with the topic and not with the researcher(s).

The doctoral candidate should use the Concept Analysis Chart efficiently as a guide to the literature reported in Chapter II. One of the best methods for writing Chapter II is to outline the chapter and follow that outline. A Concept Analysis Chart outlining the major research

findings reported in Chapter II should also be included in this chapter and later in Chapter V. The Concept Analysis Charts must be included in Chapter II either with the topic review or at the end of the chapter. The charts must be treated as any other chart or table and must be discussed in the chapter text. Figure 6 on the following page provides an example of a concept chart from Dr. Leslie McCracken.

Topics. Every topic that will be addressed in the findings must be covered in Chapter II. A good technique is to list all the elements of the overarching research question. These elements must be included in Chapter II. Although the literature may be scarce in some areas, the doctoral candidate is reminded to consider the importance of relating all possible topics in Chapter II. If a survey format is used for data collection, the context of each item on the survey must be included in the literature review. This review is necessary to illustrate the reason for including the item in the survey and to give justification to soliciting the information in the item (See Chapter III). The doctoral candidate must remember that all discussion of findings in Chapter V must tie to the literature review of Chapter II.

Some students tend to focus on one overarching perspective or research orientation; some want to only work on a quantitative or a qualitative dissertation without regard for the research question and the literature review. Allow the research question and the literature review to help guide and direct the type or types of research techniques employed in the doctoral dissertation.

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
Onwuegbuzie & Seaman (1995)	Compare test performance under timed and nontimed conditions	26 graduate students from non-math oriented disciplines	Quantitative: t-test	<ul style="list-style-type: none"> test anxiety deflated scores and was exacerbated when test was timed
Gazella, Masten, & Stacks (1998)	Investigate relationship between stress scores and learning strategies	126 undergraduates of psychology class	Quantitative: inventories compared using Pearson product-moment correlations	<ul style="list-style-type: none"> test anxiety creates physiological and emotional reactions test anxiety negatively impacts test performance
Hong (1999)	Examine relationship between test anxiety and perceived test difficulty to actual test performance	208 undergraduates enrolled in statistics	Quantitative: data analyzed using the structural equation modeling	<ul style="list-style-type: none"> whether test difficulty was perceived or actual, it had a significant impact on the students' level of anxiety
Lee (1999)	Examine the effect of test anxiety on the working memory	Students in a psychologist: 12 high-anxious students and 12 low-anxious	Quantitative: Test Anxiety Inventory; ANOVA was conducted	<ul style="list-style-type: none"> Anxiety, effect test performance, especially if high-anxiety person impaired verbal and visual/spatial aspects of working memory

Figure 6. Example Concept Analysis Chart: for studies related to test anxiety.

The doctoral dissertation should contain a clear focus on the research statement, research question(s), and constructs and/or variables under investigation. The doctoral dissertation should not be construed as a definitive “epistle”. Rather, the doctoral dissertation should include references to the larger context in which the study resides but should focus on the topic to be researched. For example, many students view every doctoral dissertation in P-12 education as having implications for educational reform. Even though much of today’s P-12 education literature reflects reform, the doctoral dissertation should focus on the topic to be covered and how that topic may impact or be impacted by educational reform. Most doctoral dissertations should have a small section that explains the context in which the research takes place. Often, this context is the state or other geographic location, or could be the culture of the population. In addition, the population should be identified and discussed from the literature.

Bias. The literature review should be unbiased and examine both sides (and maybe several sides) of the issue, if possible. For example, research that both supports and contradicts the student’s hypotheses should be presented for a complete understanding of the research topic. By describing both the “pros” and “cons” of a particular topic the doctoral candidate lends credibility to the dissertation and highlights the importance of the topic to education. Research that is biased often has limited usefulness to the field of educational research and/or educational practice. Bias is demonstrated in several ways, and the doctoral candidate is cautioned to read and edit carefully to eliminate bias to the extent possible.

Variety of sources. Many doctoral candidates tend to become overly reliant on one or two authors as they conduct the literature review. Such over-reliance leads to a very narrow study with limited significance, generalizability, and importance. The doctoral candidate is encouraged to spend ample time in a variety of databases to saturate the topic. It is much easier

to delete information in the literature review than to go back later and try to add resources. Always, always, always use the literature reviews of the authors you include in the literature review. Such, “second source” material is often critical to understanding the evolution or history of a concept.

Variety of databases. Often, doctoral candidates develop a narrow perspective on the availability of databases and sources of information. The doctoral candidate is encouraged to examine all possible databases for information and sources to include in the literature review. Often education uses information and research from other disciplines including business, psychology, etc., and these should be consulted for possible inclusion in Chapter II. An over-reliance on the ERIC database for education can be a deadly sin in Chapter II. Doctoral candidates who need assistance with databases should contact their chair of the doctoral dissertation committee or visit the Library for information. A literature review should never be conducted without a close examination of Dissertation Abstracts or Thesis Abstracts to see if someone has conducted a study on the topic. A database research log is helpful to track which databases and keywords have been searched. (See Figure 7.)

Date	Database Name	Search Terms	Search Limits	Results
8/1/2018	EBSCOhost	portfolio assessment AND (higher education OR college OR university)	<ul style="list-style-type: none"> • Scholarly/Peer Reviewed • Date range 2007-2013 	<ul style="list-style-type: none"> • 278 results • Exported 40 citations to RefWorks • Need to search for articles specific to special education programs

Figure 7. Example Database Research Log (Source: Northcentral University Library).

Length of Chapter II. Chapter II normally runs between 50 and 75 pages in length. This may vary depending on the topic being researched and the abundance or absence of high-

quality research that can be utilized by the doctoral candidate. Some topics have been more substantially researched than others. Quality of the research reported is critical; this review is about quality of the literature reviewed and not the quantity examined and reported.

Summary

A substantial summary should conclude Chapter II to give the reader a thumbnail sketch of the major areas addressed by the literature review. A good synthesis of the literature is all that is needed. A good rule of thumb is to provide enough information for the reader to determine the “pros” and “cons” of the topic. Remember, the summary is an author’s summary of the information presented in Chapter II. The summary should include no new information and typically includes no references.

Chapter III Methodology

Chapter III is a factual report of the methodology to be used to collect data reported in the research study. The doctoral candidate is cautioned that no data may be introduced in Chapter IV except for that described in Chapter III; however, Chapter III contains no data. The purpose of Chapter III is to give a detailed plan the doctoral candidate will use to carry out the research required for the doctoral dissertation. Chapter III should be detailed enough for another research to replicate the proposed study. The doctoral candidate should reference Chapter III, including but not limited to, definitions, rationales, and items in the instrumentation or directions for the study. This chapter should be arranged in the following order:

1. Introduction
2. Research Questions/Hypotheses
3. Research Design
4. Population
5. Participants
6. Instrumentation
7. Pilot Study (if utilized)
8. Data Collection
9. Data Analysis
10. Summary

Alignment is an essential requirement for completing a doctoral dissertation successfully. As you develop Chapter III, ensure that each component aligns with the other components. Figure 8 provides an example of a design alignment tool.

Research Problem	The demand for STEM graduates has increased, but the number of incoming freshmen who declared a STEM major has remained stagnant. High school courses, such as calculus, can open or close the gate for students interested in careers in science, engineering, mathematics, and technology.
Purpose of the Study	The purpose of this study was to determine if high school mathematics preparation was correlated to academic success in the pre-engineering curriculum at the post-secondary level.
Research Question	What is the relationship between high school mathematics preparation and quantitative grade point average in a pre-engineering curriculum?
Research Design	correlational
Data Collection Measure	<p>The College Freshman Survey (Halpin & Halpin, 1996)</p> <ul style="list-style-type: none"> • Self-reported final course grades for high school mathematics courses (i.e., algebra I, algebra II, geometry, trigonometry, and calculus) • Self-reported standardized test scores (i.e., SAT quantitative and ACT math scores) • Self-reported interest in high school mathematics courses (i.e., algebra I, algebra II, geometry, trigonometry, and calculus) using 4-point scale <p>Institutional Data</p> <ul style="list-style-type: none"> • pre-engineering quantitative final course grades after the first attempt (i.e., math, science, statistics, and computer science)
Independent Variable (categorical or continuous)	Adjusted standardized test scores, algebra I course grade, geometry course grade, algebra II course grade, trigonometry course grade, calculus course grade, and interest in high school mathematics (continuous)
Dependent Variable (categorical or continuous)	Cumulative quantitative GPA (continuous)
Data Analysis	Multiple Regression

Figure 8. Example Design Alignment Chart (Source: Brown, Halpin, & Halpin, 2015).

Introduction

The doctoral candidate should restate the research topic and tie this chapter to the preceding chapters. Also, outline briefly the components of Chapter III. This chapter should begin by presenting the hypotheses or research questions and the relationship of these hypotheses or research questions to previous findings. The methodology section of the doctoral

dissertation should build on the description of methods outlined in Chapter I. These components may include a section describing participants or subjects, a section describing testing or other measurement procedures undertaken with the participants, and a section discussing limitations of the methodology. The introduction should be approximately two to three pages to introduce the reader to this chapter and to refresh the reader's memory about (a) the problem being investigated, (b) the research questions posed to guide the doctoral candidate in fulfilling the purposes of the study, and (c) the hypotheses to be tested.

Research Questions/Hypotheses

After an introductory sentence, simply restate the research questions from Chapter I. The research questions or hypotheses should be restated in logical, sequential order. The doctoral candidate may be permitted to elaborate on the research questions. Restating the research questions provides both the reader and the doctoral candidate with a refresher on the questions and the direction of the methodology. As stated earlier, this section contains a listing of all the possible research questions that will be addressed by the study and builds on a comparable section in Chapter I. The research questions reported in this chapter *must* be the same questions as reported in Chapter I of the doctoral dissertation.

Research Design

The doctoral candidate should thoroughly explain the methodology and/or procedures used in conducting the study. Particular attention should be paid to the procedures employed in designing any research instruments that will be used in the study, specifically their validity and reliability. This section should also include operational definitions of the variables in the study. Research design—Why was one type of research chosen over another? Why was the qualitative used versus quantitative? What was the research rationale for the design? Were other

approaches discarded? If so, what? Do you have Quantitative, qualitative, or mixed methods? Describe why. If Quantitative, which design (e.g., experimental, quasi-experimental, causal-comparative, correlational)? If Qualitative, which design (e.g., phenomenology, ethnography, case study, narrative)? If Mixed Methods, which design (e.g., exploratory, explanatory, convergent, embedded, multi-phase)? Describe why you chose the design you selected. The assumption should not be made that the reader has prerequisite knowledge of research methodology or terminology. Therefore, use references to illustrate knowledge of research methodology used in the dissertation. A simple chart will highlight and confirm that the appropriate research design will answer the research questions. (See Figure 9.)

Research Question	Instrumentation/ Analysis	How will strategy answer research question?

Figure 9. Research Design Confirmation Table.

Population

Length of this section will vary from dissertation to dissertation. The doctoral candidate is obligated to define precisely the population and setting represented by this research project. Also, the method for selection of a representative sample from the population must be specified, along with the exact number of subjects to be included in the sample. The sample unit of analysis needs to be specified (e.g., school district, school building, student, teacher, or principal as the “unit of analysis”) as well as the sampling method (e.g., type of probability (random)

sampling or non-probability (purposive) sampling, sampling procedures). [Check a statistical analysis text for a table to determine the required sample size for statistical analysis depending upon population size.] Who is the population that will provide answers to the research questions? How was the population identified? Why is the targeted population the best possible populations to answer the research questions? Address other possible populations and why they were eliminated from consideration for this study.

Participants

Who are the actual participants in the study? What are the characteristics of the sample (e.g., age, gender, ethnicity, work experience) and other sample attributes relevant to the research question(s)? Why were they chosen? How were they chosen? Why should they be willing to participate? What does the study hold for them that might entice them into response? If a sample is to be used, include procedures for determining sample size and how the sample will be obtained. Was the sample obtained from an existing database? If so, what? How was permission obtained to use an existing database? Be sure to include references throughout this section to justify the type of sample used. There are many types of sample and several methods for determining sample size. Be sure to be very specific about how the sample is chosen and give documented reason(s) for selecting the sample.

Instrumentation

Instrumentation should include the type of instrument(s) that will be used to collect the data. Students are encouraged to use instruments that have been used in previous studies to eliminate the need for reliability and validity studies. Several good sources (e.g., *Burriss Mental Measurement Yearbook* and *Tests in Print*) are available for examination. Also, be sure to check Dissertation Abstracts and the PsyLit databases for possible data collection instruments. Any

instrument that will be used in the study should be thoroughly documented to demonstrate to the doctoral dissertation committee how the instrument will collect the data necessary to answer the research questions. Be sure to include information concerning permissions obtained to use an existing instrument. Include formal permissions in an Appendix.

Locating or developing an instrument is one of the key components of a good research study. Unless the instrument chosen can answer the research questions, nothing can be gained from the research. Be sure to include information for each instrument on (a) form of the instrument, with sample items and scaling/scoring information, (b) reliability and validity from past studies if utilizing pre-existing scales, questionnaires, surveys, and/or instruments (i.e., citing the original journal article where the scale was constructed and validated initially), and (c) reference to an appendix in which the reader will find the complete instrument and all correspondence and directions, which will be sent to the respondent subjects in the sample. A considerable number of literature citations will probably appear for each instrument.

Describe all instruments you will use (i.e., tests, surveys, interview protocols, observation schedules/forms). Describe in detail how the instrument is set up. For surveys, describe how to score it and what response scale mean. Put instruments in the Appendix. If you are using someone else's instrument, describe how you obtained permission to use it and place the formal permissions in the Appendix. If creating your own, describe the creation process. Describe reliability/validity (e.g., how it was determined and how you will determine it). The doctoral candidate is cautioned to make sure that the instrumentation is clear *before* defending the dissertation proposal.

An item analysis must be presented in Chapter III that contains three elements: A listing of all items in the data collection instrument(s); the literature that supports the inclusion of the

item in the data collection instrument; and, the research question that each item will answer. Do not conclude that each Item Analysis will look the same; however, the components are the same.

Excerpts from sample Item Analysis Charts are included below as Figures 10 and 11.

Item	Research	Research Question
1. Age	Anderson, 1998, Holliman, 1996	1
2. Marital status	Chase & Bell, 1994	1
3. Number of children in K-12	Anderson, 1998	1
4. Age youngest child	Holliman, 1996	1
5. Highest degree	Grogan, 1996; Stouder, 1998	2
6. Race/Ethnic	Alston, 1999; Hodgkinson & Montenegro, 1999	1
7. Extended family in area	Anderson, 1998	1
8. Number of students in district	Holliman, 1996	3
9. Metro status	Gupton & Slick; Holliman, 1996	3
10. Years in present position	Anderson, 1998; Holliman, 1996	4
11. Longest superintendency	Anderson, 1998; Holliman, 1996	4
12. Number of superintendencies	Anderson, 1998; Holliman, 1996	4
13. Supt. Prof. Development Program	Glass, 2000; Grogan, 1996;	2
14. Age first superintendency	Anderson, 1998; Holliman, 1999	3
15. Previous positions	Huang, 1998; Heller, 1999; Glass, 2000	3
16. Career path	Huang, 1998; Keller, 1999	3

Figure 10. Example of Quantitative Item Analysis.

Item	Research	Interview Question	Research Question
1. Married	Anderson, 1998; Holliman, 1996	1	1
2. Ages of children	Holliman, 1996	1	1
3. Number of children	Anderson, 1998; Holliman, 1996	1	1
4. Academic preparation	Grogan, 1996; Stouder, 1998	2	2
5. Succession	Crawford, 1992; Holliman, 1996; Glass, 2000	2	4
6. Number of superintendencies	Anderson, 1998; Holliman, 1996	2	4
7. Years of experience	Anderson, 1998; Holliman, 1996	2	4
8. Administrative positions	Anderson, 1999; Glass, 2000; Holliman, 1996	2	3
9. Length of superintendency	Anderson, 1998; Holliman, 1996	2	4
10. Awareness	Crawford, 1992; Durckel, 1999	3	3
11. Seek/apply	Stouder, 1998	4	4
12. Internal promotion	Stouder, 1998	4	4
13. Relocate	Crawford, 1992; Glass, 2000; Grogan, 1996; Holliman, 1996	5	4
14. Hardship to relocate	Chase & Bell, 1994	5	6
15. Support system	Chase, 1995; Holliman, 1996; Stouder, 1998	6	5
16. Influence	Gupton & Slick, 1996	7	5
17. Mentor	Gupton & Slick, 1996; Sherman & Repa, 1994	8	5
18. Barriers	Crawford, 1992	9	6
19. Lack of experience	Grogan, 1996; Holliman, 1996	10	6
20. Strategies to overcome Barriers	Anderson, 1998; Brunner, 1997; Morie & Wilson, 1996;	11	8
21. Advantages	Crawford, 1992; Stouder, 1998	11	7
22. Accessibility	Crawford, 1992	12	8
23. Professional organizations	Crawford, 1992; Durckel, 1999	13	8
24. Balancing responsibilities	Blanche, 1996; Crawford, 1992; Grogan, 1996	14	6
25. Advice to aspirants	Gupton & Slick, 1996; Pavan, 1999	15	8

Figure 11. Example of Qualitative Item Analysis.

Pilot Study

If a pilot study will be utilized, outline the procedures to be used and how the results obtained will be used. Clearly outline why the pilot is important and how changes will be made as a result of the pilot. If an expert panel is used as part of the pilot, be sure to include the names

and qualifications of the panel in an Appendix. For the qualitative dissertation, outline the procedures to be used to validate the protocols used for interviews or other forms of data collection. Who are the participants and how will their recommendations be incorporated into the final study?

Data Collection

The doctoral candidate should outline the research procedures for collecting the data. Be very clear as to how the instrument was designed for use in educational research, how it was coded, the number of items, and types of scales. Include any information that would be important to someone who might wish to replicate the study. Also, include here the actual attempts at follow-up and how they were conducted, and how often and with what results. What is the acceptable response rate for this study? What evidence supports this response rate as an acceptable? Give documentation and justification in enough detail that you can substantiate to the doctoral dissertation committee and to outside reviewers.

Any data collection procedures should meet certain basic criteria. These criteria will improve the quality of the data you collect, enhance your efforts, and increase the confidence you can have in your findings and conclusions. The criteria: validity, reliability, objectivity, usefulness, clarity, and parsimony. Each of these is described below.

Validity. The extent to which you are obtaining the data you want-the correspondence between the reality you are studying and what your data collection instruments and procedures produce is called validity. What you have decided to study must be carefully defined, and the procedures and instruments you select or develop must match the purpose closely. The extent to which you have this match determines, in part, the validity of your study.

Reliability. The extent to which your data collection procedures are stable over time is called reliability. To ask a student or teacher to fill out a questionnaire or to observe a faculty or school board meeting and get a sample of typical behavior that is not representative of that event or situation is to influence your findings and conclusions so that you cannot have confidence in them as reliable of your procedures and instruments before you collect your data.

Two general ways to determine reliability are: (1) ask a few respondents to take your instrument twice or observe them at two different times, and (2) ask the same questions in slightly different ways in the same instrument or have two observers look for the same phenomenon at the same time. There are statistical tests you can use to establish a reliability coefficient, and you may want to request some help for this. If the data you get from your questions or observations vary significantly over time or across similar questions on the same instrument, you may not be getting reliable data. If this situation occurs, you should try to clarify your purpose or improve your questions or observations until you get responses that reflect more stability. It is essential that you establish both validity and reliability for your procedures and instruments.

Objectivity. Being objective in your data collection procedures reduces the chances of having your own personal values, biases, and beliefs affect your observations or the answers or behaviors of the respondents. Clearly, your values and beliefs will influence your decisions from the start-what to study, when, how, whom to talk to, what resources you will use, and in many other ways. No studies of education are ever value-free. The important thing about objectivity is for you to recognize and state the choices you have made and why you made them, and then to provide the opportunity for your respondents to answer or behave in a situation in the way they choose, expressing opposing values and biases if they so choose. If this opportunity is not

available, you have determined what your data will be, and this is inappropriate. Objectivity requires that you be aware of and control your values, biases, and beliefs as much as you can. It may be quite a challenge to provide a situation in which respondents can reply in ways that are contrary to your own basic beliefs, and yet, you must be able to do this in appropriate ways if your study is to have a high degree of objectivity.

Usefulness. Any purpose for studying education should have a use; it is futile to collect data for the sake of getting data. The data should be linked directly to the research question(s) and hypotheses. The purpose of your study and the data you collect should help you understand an aspect of school, solve a problem, satisfy your curiosity about a situation, or help to improve something about a school. If data will not be useful, do not collect them.

Clarity. It is essential that you be very clear about your purpose, your procedures, and your instruments, and that your respondents be equally clear about what you are asking them to do. Without this clarity from each participant in the study, you cannot be sure of what your data mean. If you are not clear, the fuzziness will be communicated to the participants, and their responses--if they choose to participate -will be fuzzy, too. If this lack of clarity occurs, you will not be able to interpret your data or use the findings appropriately. Think through your study carefully. Select or develop your data collection procedures carefully, then have others examine your statements of purpose, procedures, and instruments to see if what you communicate is clear to them. In this way, you can have confidence that your study has clarity and alignment with the problem statement, purpose of the study, research question(s), hypotheses, research design, data collection procedures, and data analysis procedures.

Parsimony. Conducting your study as simply as possible is important. Good studies are not necessarily elaborate or sophisticated; they meet the above criteria as simply and efficiently

as possible. If a one-page questionnaire will collect the data you need, do not make it five pages long just to try to make it look good. If observing one biology classroom is what you need to do, do not observe in three classrooms in different schools. Do what you need to do in your study and do it well.

Other sources of data. Attendance and tardiness records, for example, or enrollments in elective classes may reflect the level of interest students have in classroom work as well as, if not better than, asking them in an interview how much they like that aspect of the curriculum. The number of books checked out of the library per month, the number of students who attend extracurricular clubs, the number of disciplinary cases handled by the vice principal, infraction of rules which are most commonly, or rarely, violated, what lunches are most popular with students, what the average student-teacher ratio is, the size of the school budget for materials, the physical size of the school and classrooms, and other readily available data could have as important a bearing on your study as the data you plan to collect by questionnaire, observation, or interview. Spend some time thinking about data already available to you from places, such as the central office, the state department of education, reports of federally funded projects, the PTA, Census Bureau, or the local Chamber of Commerce. These places may have important and helpful information that would allow you to develop a more comprehensive picture of your study than just the data you may need to collect yourself by observing or administering questionnaires within a school.

Published resources. Besides tests, many instruments already exist that you might use rather than developing your own. The advantages of these instruments are that they may already possess the qualities discussed above: they have been developed by experts in the field and reflect that understanding; they are valid and reliable; and they are readily available for use. The

important thing to remember is that such instruments must be directly related to your topic of study or they will not be useful or appropriate, even though they are well developed. After review of the proposed instrument, consult the resources listed in the bibliography to determine whether there is a published instrument you might use. If so, it will save you time and effort. If one does not exist, consult the appropriate resources in the bibliography for procedures on how to develop your own.

Institutional Review Board. After the dissertation proposal has been approved, the student should submit an application for human subjects research to the Institutional Review Board (IRB) for approval. This requirement applies to all research in education; therefore, all students must complete this step in the process. This step must be followed, or the student will automatically be withdrawn from candidacy. IRB forms are found on the [Columbus State University IRB website](#). The doctoral candidate should ensure that ethical components of the research are presented in Chapter III.

1. Research goals are consistent with principles of working toward improving education.
2. Benefits and risks to participants are clearly identified and communicated to participants through informed consent
3. Confidentiality of data is adequately ensured.
4. IRB approval is granted before any data collection.

Once the research methodology has been objectively explained in Chapter III, the report of the data must be completed. Data should be reported in an objective and accurate style. Personal interpretation, opinion, and bias have no place in the analysis. Objective inferences must be made from the data, and only from the data. Hypotheses and research questions should be dealt with singularly and in the order stated in Chapter III or the presentation of the data may

be presented in a manner best suited to the data interpretation. The doctoral candidate and the chair of the doctoral dissertation committee should make the final determination concerning how the data will be presented.

Other advice. Keep a broad perspective on your study. Get those data that will be important to you. You may need to collect more than one type of data; you may need to employ different methodologies. A second set of data may add a fresh perspective to your study that one set will not provide. The criterion of parsimony must be balanced against getting all the data you need to fulfill the purpose of your study. Approach the task of developing a design for data collection creatively and with an open mind. Try to identify all the data you will need to meet the purpose of your study. Then, systematically and rigorously (by meeting the criteria discussed above), go about collecting it in appropriate ways.

When you have selected or developed your data collection procedures, be sure that what you have is what you really want. "What you see is what you get" is true about studying education. If you do not ask important questions about a school or observe the essential aspects of education, you will not have good data available. If you ask a question that is different from the one you intended to ask, you will not generate the data you want. If you ask students to answer your question about using the library with a "yes" or "no," When you really wanted to know how often they use it, you will only know whether they ever visit or not-not whether they visit three to five times a week, three to five times a month, once a month, or less frequently than once a month. You are stuck with what you ask or observe. Be sure that what you plan to collect is what you really need to answer the question you have posed. You may discover a well-developed research instrument measuring exactly what you need.

Length of this section will vary greatly from dissertation to dissertation. The doctoral candidate is obligated to describe precisely and expansively the data collection methodology (e.g., mail survey, personal or telephone interviews, participant observations, accessing existing databases). Include a separate section for each instrument adopted or developed for data collection, whether that might be published instruments, researcher-developed instruments, interview schedules, or test results.

Data Analysis

Specify the descriptive and statistical analyses that will be used to answer the research questions and/or test the research hypotheses. Cite literature sources for your discussion of the statistical techniques. Convince your reader you are knowledgeable about the statistics used in the study. Statistical analysis is an integral part of most dissertations; in the past the quality of reporting has been inconsistent. You should summarize your data in a concise way. A table is a good method. This table should be followed by a report of the test result, not by the full calculation. [Check a statistical analysis text or a statistician to assist in statistical methods, depending on the types of variables being investigated, specifics of the sample of the study (groups), and research design].

What statistical procedures will be used to analyze the data? Why is the specific treatment utilized? Why is one treatment selected over another? Why is ANOVA used rather than a *t*-test? What computer package will be utilized to assist with the research analysis? Why is SPSS or QSR chosen for analysis? What is “significance” and how will significance be determined? Also, any data analysis that is used must be referenced. This section will be substantially different for quantitative and qualitative studies.

This section should also include a general review of how the data will be treated once the analysis is complete. The doctoral candidate should outline a plan for how the findings will be reported in Chapter IV. Will charts and tables be used? Will materials be presented in graphic or tabular format? Will the data be reported in both text and graphic format? Will the research questions be answered by question or by each item on the instrument? Will the qualitative data be reported by research question or by major findings from the data? Now is the time to make these decisions.

Summary

Chapter III should conclude with a brief summary of the methodology to be used in the research study. No references are permitted in the summary. The summary must be written as if someone was reading only the summary and not the entire chapter. Simply stated, could the reader determine the methodology from the summary?

Chapter IV

Report of Data and Data Analysis

Once the doctoral candidate has collected the data, the challenge of interpreting data begins. In this stage, the doctoral candidate will summarize the data and make sense of what the participants and documents mean. Summary and interpretation should be aligned with your purpose of the study. Some portions of your data may suggest additional questions to study that are unrelated to your original purpose. You must not hesitate to follow such leads, but you should be mindful not to digress completely from the research question(s) stated in Chapter I. For example, even though your study may have focused on the attitudes of students and teachers toward career education as it is implemented in academic courses, you may get a clear notion from the responses that students, particularly, would like to have more involvement in decisions regarding what they learn. Unless you included decision-making as a concept in your design, you will not be able to say very much about it as a result of this study. You could, however, pursue decision-making in the curriculum as a major concept in another study. Remember, though, you undertook this study for a specific purpose. Examine the data primarily in relation to that purpose.

The first stage of interpreting your data is to summarize what your instruments contain. Count and tally the raw responses to your questions. Summarize and synthesize the responses to your interviews. Organize the abstracts of what you took from your analysis of reports or documents. This stage of simple counting or of synthesizing what was said in interviews or documents is called summarizing the raw data. Raw data refers to the actual responses of the participants or the actual statements taken from documents as you conducted your content analysis—that is, as you looked for information that relates directly to the purpose of your study.

This process can be tedious, but it is a very basic one. If you are using an instrument that is available commercially, scoring procedures will be a part of the user's manual. Follow these procedures precisely. If you developed your own instrument, use a copy of it to tally respondents' answers to each item. If more space is needed than the original instrument allows, cut an instrument apart and paste the item onto another sheet of paper to allow as much room as you need to tally the responses. This process is helpful in tallying responses to open-ended items. When this process is complete, you have a summary of the raw data.

The simplest summary of your tallies may be to report the actual numbers of participants who answered "yes" or "no" to a particular question. For example, how many students did homework as it was assigned regularly, or how many teachers never attended faculty social gatherings? These data must be reported in relation to the total number of respondents who answered the question, of course. If quite a few respondents did not answer the question, you will probably need to keep a tally of that number. If a fairly large number did not answer a particular question but did answer other questions, it probably indicates some problem. Perhaps the question was not clear. The information may not have been available to the respondent. Or, the question may have been too sensitive for people to answer comfortably. For whatever reason, data from questions, which have many "no responses", should be handled with caution and even suspicion in drawing conclusions. When those items are used in your summary, indicate the number of respondents who did not answer those particular items.

A next stage, which helps you more clearly understand what the raw numbers mean, is to report the responses in terms of frequencies and percentages. Frequencies are the total counts or tallies. Percentages are calculated by using the total number of like responses (i.e., the number of students reporting they attended the debate club on a regular basis-as the numerator, and the

total number of responses of all students answering that item on the questionnaire as the denominator) then converting them to a percentage). Percentages make your data more readily understandable and meaningful. The percentages should not be used for inflating and/or making the results “look good”. To read that 61% of the teachers believe they have enough materials to adequately teach biology is more readily understood than to see that 44 out of 72 teachers reported they had enough materials. Converting to percentages gives a common basis for understanding the frequency of the responses. This process can apply to interviews and documents, where a tally of the number of times an answer appeared represents important data in addition to what was said in the answers. For example, it may be just as important to know that 95% of all the districts and state curriculum documents analyzed said it was as important for teachers to state behavioral objectives as it is to know that the quality of those objectives contained in the documents as examples emphasized lower levels of cognition and did not deal with problem-solving skills. The number reflecting the first finding indicates the quantity of the documents that advocated behavioral objectives, and the second finding indicates the quality of the objectives. The first finding must come from an actual count of the documents, and the second finding can come only from an analysis of the behavioral objectives stated in the documents. In addition to frequencies and percentages, the data should be summarized using descriptive statistics, including measures of central tendency (e.g., mean, median, and mode) and measures of dispersion (e.g., variance, range, standard deviation).

Beyond this elementary level of data analysis, there are statistical procedures you may want to use in order to understand more fully what your data mean. Be sure to select the statistical procedure that is compatible with your type of data collected through the stated data collection procedures, research design, research question(s), and/or hypotheses. If you are going

to use a more sophisticated level of data analysis than described above, consider it in the planning stages of your study. Many statistical procedures require a minimum number of responses, and the responses may have to meet certain qualifications. If these procedures are not built into your data collection procedures and instruments, you might not be able to use the statistical procedure you want in analyzing the data later. If you plan to use them and are not able to do so knowledgeably on your own, seek help early in the planning stages of your study. In addition, for the collected and analyzed data, you should report the Cronbach alpha coefficients and validity coefficients (i.e., discriminant and convergent at minimum) for quantitative studies or quantitative components of mixed-methods research studies.

Statistics is a specialized field of knowledge. Do not hesitate to seek help from experts in the area if you want and need it. Not all statistical techniques are terribly complex, nor do they necessarily require a computer, however, so do not eliminate the possibility of using more sophisticated analysis procedures just because you do not know anything about them or because you do not have ready access to a computer. Investigate the possibility of using statistical procedures by locating knowledgeable and expert resources available to you. You may find out that the more complex statistical analyses are manageable for you and that they can help you understand the data you have worked so hard to collect. A careful and deliberate consideration of how best to analyze your data is an essential step in planning and implementing a good study.

Consistency

Consistency is a key concept to use in whatever technique you decide upon to analyze your data. If you decide to summarize a response from an interview in one way, then you must be sure to do it in that way for all other responses regarding that item. It would be confusing to summarize dissimilar responses as the same. For example, if you examine attendance reports for

data, you must not take total absences of any kind from one school, excused absences only from another school, excused absences for medical reasons from another, and then summarize them simply as days absent from school throughout the district. They are dissimilar data and should be handled as separate cases. Consistency in handling data assures that you can have confidence that the data you report are comparable and have been treated in equal and appropriate ways. Consistency impacts applicability (external validity or transferability), consistency (reliability or dependability), neutrality (objectivity), and credibility (internal validity or truth value).

Clustering of Data

A next stage in interpreting your data might be to cluster findings of several items on a questionnaire or interview in order to draw a higher-level conclusion than you might otherwise be able to if you only considered responses to a single item or a single statistical procedure. This level of interpretation might include dissimilar data in relation to how they were collected or analyzed in order to cluster them around a broad concept or idea directly related to the purpose of your study. This level of interpretation still should make explicit, however, what data were used in the summary, generalization, or conclusion. Data might be used from questionnaires, interviews, and content analysis of documents to reach a higher order of conclusion from your data. For example, student and teacher responses from a questionnaire may include that over 75 percent of each group report they teach or learn adequately what they need to in order to be successful readers. Scores on the minimum competency exams for the district might indicate only a 3% failure rate in the district, but 95% of those students who failed the exams for the first time pass them on the second try. An analysis of the school district's budget may indicate a higher percentage of expenditures for reading materials than is spent on any curriculum area. Interviews of all principals in the district may indicate that only one out of ten believes that the

district should place greater emphasis or priority on reading skills. All of these individual findings from dissimilar data begin to suggest the conclusion that the district is doing a good job of reading instruction throughout the grades. It is important that the pieces of data upon which the conclusion is based be conceptually related and that you report explicitly all the data you used to reach the conclusion. The reader or user of your study then has a perspective about the conclusion that is essential.

In the example presented above, it should be noted that there are no data included from parents or the school board. These are significant groups who perhaps ought to be consulted before the conclusion is accepted as fact and applicable to the entire district. It also might be important to find out why one principal and about one-fourth of the teachers and students were exceptions to the conclusions. Are they all at the same school? Are all teachers who deviated from the majority special education teachers or teachers of gifted students? Are the students in the one-fourth of the sample who responded negatively those who received the lower scores on standardized achievement tests and who failed the minimum competency tests? Each of these questions is a legitimate one that puts the conclusion into perspective because the findings upon which the conclusion was based were carefully reported. The questions also begin to suggest follow-up studies that might be conducted.

Summarizing Data

An efficient way to summarize data is to record them in tables, graphs, or other visual displays. There are many tabular and graphic forms, and each has strengths and limitations. A good way to decide upon the form to use is to refer to educational research texts and research reports, particularly those published in journals. Whatever form of visual display is selected, it should be appropriate, accurate, and answer the research question(s) and/or hypotheses. The

purpose of using such visual displays is to report clearly and simply your findings. They also can be a convenient way to summarize what you found out an essential part of your presentation- and yet leave more time for your conclusions and implication. The latter are likely to be of greatest interest to most audiences, but these must be well grounded in the actual findings and details of your study.

Cautions about Interpreting the Data

There are two general cautions in interpreting your data: (1) do not assume that your data mean more than they really do, and (2) put the data into an appropriate perspective. In interpreting data, be sure to reflect as precisely as possible the actual research questions asked or comments made by your respondents. When 80% of the teachers polled indicate a strong disagreement with what is taught in the science curriculum, it is not the same idea as suggesting a radical curriculum reform. The two ideas may be logically related, but the respondents did not say the latter; they only expressed disagreement with what is taught. What your respondents said or what was contained in the documents analyzed must be reported carefully. You may draw implications from your data, but even these should not go beyond your data. A more cautious and directly related implication based upon the finding of strong disagreement with what is taught in science from 80% of the teachers might suggest an intensive study of what is actually being taught by the teachers, an analysis of what curriculum guides and achievement tests expect teachers to teach, or a determination of the necessary qualifications and skills teachers ought to have to teach science successfully. Depending upon such subsequent studies, radical curriculum reform in science may or may not be a reasonable recommendation.

Your study must be placed in an appropriate perspective to be fully understood. Some aspects of an appropriate perspective would include the size and location of your school, the

types of students and communities served by it, the ages or grade levels included within it, the number and types of respondents and documents used as sources of data, and a description of how you planned and conducted your study. These are things that should be a part of the perspective given for any study of a school. They help the reader or listener more fully understand the data that are reported.

There will be other aspects of your school to be reported as a part of the necessary perspective. These typically will be descriptive or statistical comments about your district or school which have a bearing upon the data in your study, but which are not directly a part of it. To study the math achievement of sixth grade students and report data regarding achievement test score gains per year, minimum competency test results and attitudes toward math tell an important part of the story; however, the perspective needed also would include that students come from a high socioeconomic class, that students come from a relatively small, intermediate school containing about four hundred students in grades six, seven, and eight, and that only 10% of the teachers have specialized preparation in mathematics education. These facts begin to place your data within a needed perspective so that they can be understood better.

Any interpretation you give to data must be based upon the purpose of your study, research design, research question(s), hypotheses, and the actual collected data. It is a challenge to organize and interpret data in ways that are honest and useful to you and other potential users. It also is one of the most exciting phases of your study. Interpreting the data is the payoff for all your hard work - that is why you embarked upon the study in the first place. After the data analysis and interpretation are completed, you are ready to begin writing Chapter IV. This chapter should be arranged in the following order:

1. Introduction
2. Research Questions/Hypotheses
3. Participants
4. Findings
5. Summary

Introduction

The reader must be reminded of the topic of the research and given a short summary (one or two paragraphs) of the research methodology as a means of making the transition to the research findings. Simply presenting research findings in isolation may confuse readers. Therefore, briefly review the overall focus of the study and also include the major elements to be presented in this chapter.

Research Questions/Hypotheses

Doctoral candidates are encouraged to restate the research questions or hypotheses here for the benefit of the reader and the writer. By restating, the doctoral candidate focuses on the actual research questions driving the dissertation. The doctoral candidate may find that dividing the chapter into sections that answer each of the research questions is a beneficial means of reporting the data. Regardless, the doctoral candidate is cautioned to work closely with the chair and the methodologist to make sure that data are reported in an appropriate format. The research questions must be restated in the same language as in Chapters I and III. Each research question must be answered in Chapter IV and presented in Chapter V.

Participants

The doctoral candidate should present information about the respondents in the research study. Regardless of quantitative or qualitative design, the demographic and descriptive information concerning respondents should be presented in Chapter IV.

Findings

This section is a factual reporting of the data collected utilizing research instrumentation explained in Chapter III. These data may be presented in graphic and/or tabular form with a thorough explanation. The actual organization of the section will depend on the nature of the study (quantitative or qualitative), the format of the data collected, and the preference of the doctoral candidate. For quantitative studies, a sub-heading for each *Finding* followed by a sub-heading for *Discussion* will help the doctoral candidate and readers to easily follow the narrative and graphic representations. Each research question must be addressed in the findings, including both statistically significant or not statistically significant results and effect sizes for each statistical procedure. A table must be mentioned in the narrative before it appears in the doctoral dissertation.

All charts, tables, graphs, and figures must be thoroughly and completely explained in the text. It cannot be assumed that the reader will be able to extrapolate complete information from tables and charts. It is the writer's responsibility to articulate the salient points from the tables and graphs succinctly and explain them in the text of the chapter logically. The written interpretation of the data should refer to the appropriate exposition from Chapter III.

Organization of data analysis. Use 2 or 3 paragraphs to provide an overview of how the data will be presented. What is covered here is highly dependent upon the research design of the study. If a survey instrument was part of the research that contained demographic data used to determine independent variables, then these data should be presented first and described and discussed fully. The results of any pilot study should be presented here to help explain why a pilot study was used and what changes were made to the instrument as a result of the pilot study. Some doctoral candidates may wish to include the data from the pilot study in Chapter III, which

is acceptable. Regardless of the location, the information gathered from a pilot study should be included. The way in which the research questions and hypotheses will be reviewed in the order they were presented in Chapter III. Each hypothesis and/or research question reported in Chapter III must be addressed individually in Chapter IV, including the over-arching research question. If there is a difference in the presentation of data for different research questions and hypotheses, provide a brief statement of the different treatment. For example, some research questions may have only descriptive data. Additional research questions may each have one or more hypotheses with accompanying data analysis and findings from each hypothesis. The doctoral candidate should address each research question directly, stating the extent to which that research question was answered.

Interpretation of results. This section is a very important part of your study. Based on this material, you will be able to suggest explanations for your findings, which in turn should enable you to produce a reasoned discussion of the research topic in the context of the published works as outlined in your literature review. A complete but succinct description of the results should be presented in the form of text supported by tables, diagrams, graphs, and maps. The diagrams should be integrated into the text and used to illustrate or to exemplify points made. Remember, even if your findings give negative results or show no significant relationships, this in itself does not mean that it is an inadequate study. It is the process of investigation, reporting, and discussion that is important. The interpretation of results enables you to identify any patterns or trends in your data: patterns and trends, which have been authenticated through statistical analysis in most cases.

Summary

Chapter IV should conclude with a short summary of the major findings of the study, including both statistically significant and not statistically significant. Again, no references should be included in the summary.

Chapter V

Summary, Conclusions, and Recommendations

Chapter V is a synopsis of the total study with specific considerations for the future, including implications and suggestions for further study. The chapter includes a brief summary of the entire research study, pertinent conclusions, and implications for the field of curriculum studies and/or educational leadership. Chapter V concludes with recommendations from the doctoral candidate. This chapter should be arranged in the following order:

- | | |
|------------------------------------|------------------------|
| 1. Introduction | 5. Implications |
| 2. Analysis of Research Findings | 6. Limitations |
| 3. Discussion of Research Findings | 7. Recommendations |
| 4. Conclusions | 8. Concluding Thoughts |

Introduction

A brief summary of the research project begins the final chapter. This summary should be written so that the reader could read this section and have a good picture of the total study; however, no new information may be presented in Chapter V.

Analysis of Research Findings

What are the major findings from Chapter IV? This section should be brief and outline only the major findings that will have implications for the conclusions of the study. Often these major findings have been reported in the summary to Chapter IV.

Discussion of Research Findings

The doctoral candidate must discuss the data in relation to the original literature review. The major findings should be discussed in relation to comparable data reported in the review of literature (Chapter II). This section contains no new information, only a discussion to identify

any similarities, gaps, and contradictions between the data presented in Chapter IV and the literature contained in Chapter II. The purpose of this section is to analyze how this doctoral dissertation research contributes to the literature in the field of curriculum studies and/or educational leadership. Any literature presented for comparison or contrast in Chapter V must be an outgrowth of literature presented in Chapter II. Again, the item analysis charts presented in Chapter III and the concept charts from Chapter II present ideal mechanisms for developing this section of the dissertation. For quantitative components, you should provide reasons on why the results were both statistically significant or not statistically significant. The reasons could be from the research design, sampling procedure, data analysis, or any other confounding factors or variables (e.g., logistical, location, setting) that might have influenced the results.

Conclusions

Conclusions are drawn from the research findings specifically discussed in Chapter IV. No conclusions can be articulated that are not supported by the data analysis presented in Chapter IV. Although the conclusions must reflect the findings of the study, they may be extended deductively beyond the specific study if justified by the research methodology. Conclusions are more than just a restatement of the Findings presented in Chapter IV. Conclusions focus on the broad conceptualizations that drive the study. After completing the research, the doctoral candidate should be able to draw conclusions from his/her experience from the research coupled with the findings in Chapter IV. Findings are viewed as the micro presentation of information, while conclusions are the macro presentation of information.

The conclusion(s) should be a brief resume of your investigation design and results and an overall, personal evaluation of the whole study. Any conclusions drawn should be those resulting from your work. You may make references to the relevant chapters that support the

listed finding. You may also refer to the work of others for comparison purposes; however, you should not be discussing your results in Chapter V. That discussion should have occurred in Chapter IV. If, in the process of writing Chapter V, some additional findings were disclosed, go back and include them in Chapter IV.

Conclusions should be based on the research questions in Chapter I. They should be presented in the same order as the research questions. This last chapter of the doctoral dissertation should bring the research full circle. Be very clear about stating conclusions and the discussion of the conclusions. This section should contain anything and everything that the doctoral candidate wants to say about the research that has been conducted. It is the chance to tell the reader what the doctoral candidate thinks about the research and how can the research findings apply to his or her current workplace or other similar conditions. Therefore, be sure to use references in this chapter to support what is being said! Feel free to disagree with what was found in the literature; just be sure to explain what is being thought. As the researcher, you may draw upon life experiences to support your thoughts, views, and ideas. Tie everything together. Analyze, synthesize, and evaluate what was found in the research with what you think.

All statements should be concise and should be written to support the conclusions that you have made. One way to present the conclusions is to use one paragraph for each conclusion. Alternatively, use a point-by-point format. When writing the dissertation, you should be aware of the worth and relevance of your work in relation to the current state-of-the-art, which is another reason for a rigorous Literature Review. Probably the best way to present this information is in point form. You should not be embarrassed about stating what your contributions are to the field of study. Be realistic and do exercise restraint. Your claims must be backed up by the results of your work; otherwise, you might be "hammered" by the evaluators of your work. A summary of

conclusions is usually longer than the final section of the abstract, and you have the space to be more explicit and more careful with qualifications. You might find it helpful to put your conclusions in point form.

Implications

This section is crucial to Chapter V because the doctoral candidate must speculate on the implications of the study for the field of curriculum studies and/or educational leadership. One of the primary purposes of the dissertation is to make an original contribution to the literature of the field and/or to improve educational practice. In this section, the doctoral candidate identifies what information from the study can be used by other researchers or by practitioners in the field. Without implications for the field, there is little utility for the research. What are the implications of this research for the educational leaders and the organizations they serve? What implications can be extrapolated for the larger population beyond the parameters of this study? What are the long-term and short-term implications of the findings? Who should benefit from the study? Consider the “Importance of the Study” from Chapter I. The doctoral candidate should draw implications for all those listed in Chapter I under the importance of the study. This provides a logical tie throughout the dissertation and directs the research to those identified as having an interest in the research.

Implications are practical suggestions for addressing the issues that have been raised in the research. These implications should be suggestions of what should be done. Be sure to add, following what should be done, how it can be done. Making suggestions as to what should be completed regarding an issue is an easy task. The doctoral candidate should go one step further and outline how those suggestions can be implemented. There may not be more than two or three implications for practice. The quantity is not as important as the quality of thought behind

the suggestions. There should be an implication for every person listed in *Significance of the Study* from Chapter I.

Limitations

The potential limitations/delimitations were discussed in Chapter I. For this section, the doctoral candidate should discuss limitations related to the study's sampling design, data collection, data analysis, discussion on bias-participant, researcher, setting (e.g., time, location, environmental conditions, mode of survey administration), or statistical (e.g., human error in coding, biased estimates occurring due to the research design, sampling design, data collection, and data analysis). Was there a low response rate or small sample? Did the participants include heterogeneous groups? There are four major areas within limitations: internal validity (e.g., possible alternatives to explain findings), external validity (e.g., generalizability of findings), measurement (e.g., reliability and validity of instrumentation), and statistical analysis (e.g., issues with power, effect size, or selected statistical test).

Recommendations

Based upon the findings and conclusions, the doctoral candidate may wish to make recommendations that could be either generic in nature or very specific. The list of recommendations could extend from "find another instrument" or "find another population" to "another researcher should conduct this study using a different approach." Typically, the recommendations are of two types: (1) recommendations for replicating the results of the study, and/or (2) recommendations for future research. Recommendations should be numerically listed and explained for the reader. Research often exposes further problems and introduces more questions. As a student, there is a time limit to your research project so it is unlikely that your work would have solved all the problems associated with the area of study. Therefore, you will

be expected to make suggestions about how your work can be improved and, based on your findings, whether there are areas that deserve further investigation. you write in this section will show whether you have a firm appreciation of your work, and whether you have given sufficient thought to its implications, not only within the narrow confines of the research topic, but to related fields. These reflect your ability for original thought and your potential to carry out original research, key issues in a research degree. In the case of an EdD dissertation, especially where you are expected to be the expert, it would be more than embarrassing if an evaluator can make more suggestions about how your work can be progressed. It is often the case with scientific investigations that more questions than answers are produced. Does your work suggest any interesting further avenues? Are there ways in which your work could be improved by future researchers?

Concluding Thoughts

The doctoral candidate should conclude the doctoral dissertation with a few brief, personal reflection on the research that was conducted. This section may help tie the passion for the topic of the research presented in Chapter I to the findings and conclusions of the study presented in Chapter V. What is the “take away” from your doctoral dissertation?

Additional Notes

Many doctoral candidates have difficulty with Chapter V because of the extraordinary liberties they take with data. Of course, Chapter V should be the culmination of the study and should be largely the prerogative of the doctoral candidate as to how it is reported, but there are extensive rules, which must be followed in the discussion of the research findings and in the conclusions. The doctoral candidate is cautioned to present only the information in Chapter V,

which can be justified through an overt analysis of Chapters I, II, III, and IV. Typically, Chapter V is 15 to 20 pages in length.

Dissemination. The program and the faculty of the College expect the doctoral candidate to share the pertinent findings of the dissertation in professional meetings, whether research-oriented or practitioner-oriented meetings. The faculty also expects the doctoral candidate to contribute the information from the dissertation to the professional literature in the field. Doctoral candidates should anticipate that two or more articles should be generated from the dissertation. Consequently, the doctoral candidate should identify two or more groups who would be interested in the results of the study and outline a brief plan for disseminating the research findings. How does the doctoral candidate propose to communicate the findings to the appropriate clientele or audience? What population would be interested in the results of the study?

Use the results. A final step in the process is to use the results of all of your efforts. Studying education is an important process and develops new professional skills and abilities, but it is not an end unto itself. Your study has been conducted for a specific purpose, and you should use the results to achieve that purpose. There may be other uses to make of your study—other problems related to it or other situations it might help, at least partially, to understand—but these are secondary payoffs. The most direct and primary benefit of your study is that you now have important data to use that you needed and did not have available before your study. It may be that increased understanding of why things are as they are is the major usefulness to you. If so, this finding should be ample reward for having completed your research study. On the other hand, your study may clearly suggest some action that ought to be taken. Policies may need to be revised. New in-service programs for teachers may need to be developed. Parents may need

to be better informed. Changes in the curriculum may need to be made. More attention may need to be paid to attitudinal development of students in particular areas. Faculty meetings may need to be restructured. These are possible examples of how your study might lead to action. In planning for such action, however, you must heed the caution mentioned earlier. Make sure your action plan is related directly and logically to your data.

Regardless of the use, you can personally make of your study, you also will want to report it to interested audiences. Do not think that you have nothing to report because you did not find out what you thought you would. If teachers are satisfied with the new grading policy-report it to the parents and to the administration, even if you thought they hated the new policy. Increased understanding may release creative energies to work on more pressing problems which teachers are experiencing. School board members, community members, organizations, publishers of commercial materials, members of the state educational materials commission, the teachers' union or professional organization, the budget committee, and the administrators' organization should all be made aware of your findings.

If you have significant findings in your data and draw sound conclusions, which have the potential of leading to desirable action, and if you are sure that your study is reasonably sound, seek out audiences that ought to hear your message. There are many ways in which you might report your study to a broader audience and allow other people to benefit from your work. Your efforts may prove to be very useful to them, too. A word of caution, however, journals and conferences usually have more submissions than they have room for, and they select carefully from among the applicants. Sometimes good articles get turned down because they do not meet the style or theme for a particular issue or series. Do not assume from a rejection slip that your study has been judged as poor or unimportant. When that happens, try another journal.

Benefits. The real benefits of conducting the study will have been to you. Not only will you have studied something of interest, you will have begun an important learning process as well. The importance of studying school-or other educational problems and situations-must not be minimized. Obtaining sound data about schools is an essential step in their improvement. To improve schools is a challenge and obligation to every professional educator. Improvements must occur if schools are to continue to be supported and to meet the needs of a changing society; however, improvement will not occur through the efforts of educational researchers or social scientists only.

Appendices

The appendices contain material not required directly in the text, but of general interest to the doctoral candidate and potential readers. Appendices are materials that document important components of the dissertation research process that would be too lengthy, awkward, or distracting to include within the text but should be included as appendices in the final document. Appendices should be set aside in the doctoral dissertation as "stand-alone" sections that may be moved at the committee's request. These materials may include permission forms, examples of record sheets, copies of blank questionnaires or surveys, mathematical workings, informed consent forms, and recruitment letters or emails. Material that should be in the doctoral dissertation, but which would break up the logical flow for the reader because of their length, should be included as an appendix. These items include important and original computer programs, data files that are too large to be represented simply in the results chapters, and pictures or diagrams of results, which are not important enough to keep in the main text.

All appendices must be numbered and given a title. The appendix section should begin with its own cover page. The word "APPENDIX" should appear in all capital letters. When referring to material contained in an appendix, the doctoral candidate should direct the reader to where it can be found. For example, ".....as expressed in the Council's inner area policies (see Appendix C: Extracts from the Organizational Development Plan . . .)." Examples of materials you may want to include as appendices are permission forms, examples of record sheets, copies of blank questionnaires or surveys, mathematical workings, informed consent forms, and recruitment letters or emails.