

**Guidelines for
Writing Research Proposals
and Dissertations**

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Guidelines for Writing Research Proposals and Dissertations

The following information presents guidelines for preparing and writing research papers and reports, including theses and dissertations. While these guidelines are generally applicable, specific format and style will be dictated by the nature of the research involved and the requirements of the department and institution for which the research proposal or dissertation is written. The *Publication Manual of the American Psychological Association*, 5th edition (2001) or *Concise Rules for APA Style* (2005) should be consulted for all questions pertaining to form and style that are not addressed in this guide.

A typical dissertation/research proposal consists of three chapters or parts: the Introduction (Chapter 1), the Review of Related Literature and/or Research (Chapter 2), and the Methodology (Chapter 3). The completed dissertation begins with the same three chapters and concludes with two additional chapters that report research findings (Chapter 4) and conclusions, discussion, and recommendations (Chapter 5). While the majority of the research proposal is written in the present and future tenses, the methodology and findings in the final report or dissertation are written mostly in the past tense.

Preceding the main body of the report are several pages containing the preliminary material. The following lists the elements (in order) that comprise the preliminary material. While both proposals and final dissertations contain a Title Page, the remainder of the preliminary pages are reserved for the final dissertation (although the Table of Contents is optional in the proposal).

Title Page
Copyright Page
Abstract
Committee Signature Page
Acknowledgments
Table of Contents
List of Tables
List of Figures

Please note that page numbers for preliminary material are written in small Roman numerals (e.g., iii, iv, v, etc.) that are centered at the bottom margin of the page. The Title Page counts as page i, but the number is not printed on the page. The Copyright Page (if included) counts as page ii, but is also not numbered. The Abstract begins on page iii (if there is a Copyright Page, or page ii if there is no Copyright Page) and the remaining preliminary pages are numbered consecutively.

For the main body of the paper, all pages are numbered with Arabic numerals in the upper right corner (on the right margin, from one-half to one inch from the top, with the first line of text beginning approximately one double space below the page number, at approximately one inch from the top). Note that the Word default setting places the page number one-half inch from the top and the first line of text one-half inch below the page number (i.e., one inch from the top). The default setting may be used without further adjustment. Check to assure that the page number font matches that of the narrative. Pages in the main body of the paper (including the Appendixes) run consecutively from page 1 (the first page of Chapter 1). Use a 1-1/2 inch left margin (to allow sufficient space for binding the final copies) and one inch top (i.e., about one inch to the first line of

text), bottom, and right margins throughout the paper, including any preliminary pages and appendixes. Please note that your text (and tables or figures) should not extend beyond any of the margins on any page (including appendixes that may be reduced copied if necessary).

Since the first three chapters (Introduction, Review of Related Literature and/or Research, and Methodology) are almost identical for both the proposal and final dissertation (except for verb tense in all three chapters), the following discussion of these chapters pertains to both. Chapter titles and suggested section headings appear as they would in an actual proposal/dissertation.

CHAPTER 1

Introduction

Chapter 1, which introduces the study and states the focus of the study, begins with background information regarding the problem under investigation. The Introduction should provide readers with a brief summary of literature and research related to the problem being investigated, and should lead up to the statement of the problem. In general, the Introduction begins with a broader perspective of the problem and becomes narrower as the Introduction proceeds. This section may be divided into two separate sections, the Introduction and a separate section describing the background of the problem. The Introduction narrows the focus of the study and provides a brief rationale for why the particular study is worth pursuing. Generally, the introductory section of Chapter 1 consists of about three to six pages, but may vary considerably depending on the nature of the study. The Introduction (and Background of the Problem) section(s) are normally expanded in Chapter 2 (Review of Related Literature).

Statement of the Problem

As the heading implies, the purpose of the study is stated in this section. The problem statement is among the most critical parts of the research proposal or dissertation because it provides focus and direction for the remainder of the study (and subsequent report). A well-written problem statement defines the problem and helps identify the variables that will be investigated in the study.

Generally, there is no one "correct" or "best way" to write the problem statement. However, the following examples illustrate commonly used formats that are acceptable.

1. This study will compare, contrast, investigate, describe, determine, examine, develop, clarify, or evaluate the issue being studied.

2. The purpose of this study will be to determine the variables that explain the difference between males and females and identify those variables that differ significantly between the two genders.

3. This study is designed to investigate graduate students' perceptions regarding the difficulty of coursework at USD and determine which courses are more difficult than others.

(Note: It is also acceptable to limit this section to a statement of the problem which leads up to, but does not include the actual purpose of the study. In this case, an additional section entitled *Purpose(s) of the Study* would follow that is restricted to simply stating the specific purpose(s) of the study. Also note that numbered lists using complete sentences indent the number and then wrap back to the margin for the second and subsequent lines.)

Research Questions or (Null) Hypotheses

The problem statement is further explicated in this section of Chapter 1. Hypotheses and research questions emerge from the problem statement and operationalize it in terms of specific variables and relationships to be examined and reported. Hypotheses and research questions also suggest methodology for the study and serve as the basis for drawing conclusions in Chapter 5. While hypotheses and research questions may be included under their own subheading, they are often added on to the Statement of the Problem.

Although not "written in stone," hypotheses (either directional, research, or in the null form) are stated when the research design is experimental or quasi-experimental in nature. Survey research and non-experimental research are generally limited to research questions. Whenever possible, avoid the use of "Yes-No" research questions which tend to limit the scope of your responses.

Frequently, "Yes-No" type research questions can be reworded to a more useful form that results in the collection of more useful data. For example:

"Yes-No": Do educational administrators agree on the causes of student misbehavior in the classroom?

Reworded: To what extent do educational administrators agree on the causes of student misbehavior in the classroom?

(Note: Hypotheses are tested, while research questions are answered.)

Significance of the Study (Problem)

This section addresses the "so what" of the study and report. It describes or explains the potential value of the study and findings to the social sciences or the field of education. This section, therefore, should identify the audience for the study and how the results will be beneficial to them. Remember, research is conducted to add to the existing knowledge base and/or solve a problem – how your particular research will do this should be articulated in this section.

Definition of Terms

This section of Chapter 1 provides definitions for terms used in the proposal that are unusual or not widely understood. In addition, common terms that have special meaning in the study should be defined in this section. Acronyms (except those in common usage) frequently require definition at this point.

A brief introductory statement usually precedes the actual list of definitions that are italicized, first-line indented, and listed in alphabetical order. The following is an example of the introduction to this section:

The following definitions are provided to ensure uniformity and understanding of these terms throughout the study. The researcher developed all definitions not accompanied by a citation.

When defining terms, it is important to cite appropriate references if all or some of your definitions are taken from other sources. As is true throughout the proposal/dissertation, direct quotations (less than 40 words or four typed lines) should be enclosed in quotation marks and the specific page number from the source of the quotation included in the citation. See the APA manual (p. 292) or Concise Rules for APA Style (pp. 125-127) for more information regarding long direct quotation format. The following examples illustrate this format (the first definition is paraphrased while the second is a direct quotation).

Interest groups: An instructional arrangement in which students are grouped according to their interest in a specified topic (Sumner & Lafortune, 1994).

Prevention: “Early, intensive, and untiring intervention to bring student performance within normal limits” (Slavin et al., 1992, p. 85).

Limitations (of the Study) (Optional)

Limitations are factors, usually beyond the researcher's control, that may affect the results of the study or how the results are interpreted. Stating limitations of the study may be very useful for readers because they provide a method to acknowledge possible errors or difficulties in interpreting results of the study. Limitations that are not readily apparent at the start of the research project may develop or become apparent as the study progresses. In any case, limitations should not be considered alibis or excuses; they are simply factors or conditions that help the reader get a truer sense of what the study results mean and how widely they can be generalized. While all studies have some inherent limitations, you should address only those that may have a significant effect on your particular study.

Examples of frequently encountered limitations might include the following:

1. Due to the small/unique sample available for the study, results may not be generalizable beyond the specific population from which the sample was drawn.
2. Due to the failure of sample respondents to answer with candor, results might not accurately reflect the opinions of all members of the included population.
3. Due to the length of the study, a significant number of respondents available in the preliminary testing may be unavailable or unwilling to participate in the final stage of testing.

Although stating limitations of the study assists the reader in understanding some of the inherent problems encountered by the researcher, it is also important for the researcher to design and conduct the study in a manner that precludes having such numerous or severe limitations that any results of the study are essentially useless. Research designs that control or account for the unwanted influence of extraneous variables help assure that the study results are both valid and reliable – thus keeping limitations of the study to a reasonable number and scope. (Note: While this section is optional, almost *all* research proposals and dissertations include a limitations section. Not including this section implies that your study has accounted for all (or nearly all) variables, is generalizable to all populations, and could be replicated accurately under all conditions.)

Delimitations (Optional)

Delimitations are factors that affect the study over which the research generally does have some degree of control. Delimitations describe the scope of

the study or establish parameters or limits for the study. Frequently, setting limits on the sample size, extent of the geographic region from which data are collected, response formats included in data-collecting instruments, or the time frame for the study makes the study feasible for the researcher, and such delimitations should be noted here. Technically, delimitations (factors which the researcher controls) are distinct from limitations (over which the researcher has little or no control). However, in some dissertations the researcher includes delimitations within the section on limitations (although technically they are distinct and should be included in separate sections of Chapter 1).

Examples of delimitations might include the following:

1. In order to assure manageability of the collected data, survey instruments used only multiple-choice items and did not include open-ended response items.

2. Due to the large number of potential participants in the study population, the population involved in the current study focused only on members located within South Dakota.

Notes: (1) Recommendations for further study made at the end of Chapter 5 frequently address limitations/delimitations present in the study. This allows future researchers to incorporate the information generated by the study, while simultaneously suggesting ways in which their future studies might improve upon or be more comprehensive than the present study. (2) As limitations and delimitations frequently overlap, it is acceptable to entitle this section *Limitation/Delimitations* or *Limitation and Delimitations*.)

Assumptions (Optional)

Assumptions stated in this section of Chapter 1 usually address limitations that the researcher is aware of that may affect the study, but which the researcher will not attempt to control. Assumptions may also be used to state whether or not limiting factors are likely or unlikely to affect the outcome of the study. Generally, conditions that have already been stated as limitations or delimitations should not be addressed in this section. (For example, if respondents' honesty has been listed as a possible limitation, there should not also be an assumption that respondents will answer honestly.)

Examples of assumptions might include the following:

1. It is assumed that during this study, participants' gender will not significantly affect their perceptions.
2. It is assumed that all respondents will answer all survey questions honestly and to the best of their abilities.

Organization of the Study

The final section in Chapter 1 summarizes the contents of each of the chapters that will comprise the study. This permits readers to know what information will be found in each chapter and facilitates finding specific information without searching through the dissertation page by page to do so. This section also provides a logical transition into the next chapter of the dissertation. The following presents an example of this section:

Chapter 1 has presented the introduction, statement of the problem, research questions, significance of the study, definition of terms, and limitations of the study. Chapter 2 contains the review of related literature and research related to the problem being investigated (be specific – summarize the actual contents of the review). The methodology and

procedures used to gather data for the study are presented in Chapter 3. The results of analyses and findings to emerge from the study are (will be) contained in Chapter 4. Chapter 5 contains (will contain) a summary of the study and findings, conclusions drawn from the findings, a discussion, and recommendations for further study.

(Note: As the contents of Chapter 1 have already been presented, it is equally acceptable to label this section *Organization of the Remainder of the Study*, in which case the description will be limited to Chapters 2 through 5. Use future tense in the proposal for chapters of the final dissertation that have not yet been written.)

CHAPTER 2

Review of Selected/Related Literature (and Research)

The purpose of Chapter 2 is to provide the reader with a comprehensive review of the literature related to the problem under investigation. The review of related literature should greatly expand upon the introduction and background information presented in Chapter 1. This chapter may contain theories and models relevant to the problem, a historical overview of the problem, current trends related to the problem, and significant research data published about the problem. The first section of Chapter 2 generally indicates how the chapter is organized and explains the subsections that comprise the chapter. For example,

Chapter 2 provides an extensive review of the literature and research related to principal selection. The chapter will be divided into sections that include (a) history of the principalship, (b) importance of the principal, (c) current selection practices, and (d) recommended selection practices.

As Chapter 2 may be lengthy, it is essential to divide the chapter into as many sections and subsections as needed to logically organize the information presented. (Note: Each section and subsection heading must be properly listed in the Table of Contents and adhere to the rules given in the APA manual for section headings – see pp. 113-115 (Concise Rules, pp. 27-29). Generally, use Level 5 headings for chapter numbers and then use levels 1 through 4 for chapter titles, section headings, and subsection headings.)

As Chapter 2 presents information and conclusions drawn by other researchers, citations should be used extensively throughout the chapter. Although you are presenting information from other researchers and writers, avoid overuse of direct quotations. Including many direct quotations produces a literature review that usually lacks transitions and flow, and is difficult to read.

Chapter 2 is NOT the place for the researcher to interject any personal ideas or theories. Direct quotations, indirect quotations or paraphrasing, as well as any information attributable to other researchers and individuals require citations. Citations (and subsequent references at the end of the dissertation) should use the format recommended by the *Publication Manual of the American Psychological Association*, 5th edition (2001). See pp. 207-281 of the APA manual (Concise Rules, pp. 125-187).

It is difficult to estimate how long Chapter 2 should be. In some studies that rely on historical and extensive descriptive information, Chapter 2 may be the main focus of the whole dissertation and quite long. In general, however, Chapter 2 contains between 15 and 30 pages, although it may be as short as 10 pages or as long as 50 or more pages. Generally, Chapter 2 ends with a short summary of the information presented in the chapter. Several paragraphs that highlight the most pertinent information from the review of literature are usually sufficient.

CHAPTER 3

Methodology (or Procedures)

Chapter 3 presents a discussion of the specific steps used in the literature review and collection of data for the study. This chapter generally begins with a restatement of the research problem (and usually includes accompanying hypotheses or research questions) and indicates the major sections to be included in Chapter 3. The information regarding methodology should be comprehensive and detailed enough to permit replication of the study by other researchers.

Review of Related/Selected Literature and/or Research

This section describes the process used in the review of the literature related to the problem under study. Information in this section should include specific references used in the literature search – such as Educational Resources Information Center (ERIC), *Resources in Education (RIE)*, *Current Index to Journal in Education (CIJE)*, *Dissertation Abstracts International (DAI)*, *Psychological Abstracts*, etc. – as well as the specific facilities in which these resources were found (e.g., the I. D. Weeks Library located on the campus of the University of South Dakota, Vermillion). Italicize all references that represent proper titles of publications, but do not italicize organization names or references that are not titles of publications.

(Note: It is acceptable to include this information in the introduction to Chapter 3 without using a specific section heading. This information, then, becomes part of the introduction to Chapter 3.)

Population and Sample

This section describes the population used in the study and the process utilized in selecting a sample. Unless the population is extremely small, a sample usually will be drawn from the population. The sample should be small enough to provide a manageable volume of data, but the sample must accurately represent the population if any valid inferences are to be drawn from the sample results. In general, the sample will accurately represent the population from which it is drawn if (a) sample selection carefully follows an appropriate sampling design, (b) the sample is randomly selected from the population, (c) a large enough sample is selected in relation to the total population, and (d) the sample size is adequate for the data-collecting instrument being used.

In order to provide human subjects protection, specific names and organizational identifiers should be avoided except in broad terms. Such statements as "several small private Midwest colleges" or "teachers from selected elementary schools within a large urban district" are preferable. Specific identifiers may be used when there is little or no chance of specific identification of individuals or groups (e.g., "teachers from several selected elementary schools in Sioux Falls, South Dakota"). Your description of the population and sample should be thorough enough, however, to permit another person replicating the study to define a similar sample from a similar population.

(Note: It is also acceptable to separate this section into two distinct sections – one for population and the other for sample. Also, if you include all of a population within your study – e.g., all the special education directors in the state of Iowa – it is unnecessary to use the term sample at all).

Instrumentation

This section describes the procedures used for developing an instrument to gather data from your selected population/sample. This generally includes sources of items for the instrument as well as a description of the instrument itself (e.g., number of items on the instrument, response format of the items, etc.). Sources of items for an instrument might include information gleaned from the literature review or may be an adaptation of a previous study or commercially available instrument. Instrument reliability and validity data should be described in this section whenever possible.

Instruments developed by the researcher should always be pilot tested (or field tested) to ensure instrument validity and clarity of instructions and items. In general, subjects similar to those who will be in the study sample (but not included in the actual sample) may serve as subjects for pilot testing. Results of pilot testing and accompanying comments should be used, if necessary, to revise the instrument before distributing it to the actual sample.

The instrument may also be juried or critiqued by having several "experts" examine it and make recommendations prior to, or in lieu of pilot testing. While critiquing involves only several experts examining the instrument and making recommendations, pilot testing implies actually following all of the steps of data collection with a smaller pilot sample and analyzing the results from the collected pilot data. While somewhat more time consuming, pilot testing obviously affords the researcher much greater information that leads to a more reliable and valid instrument. The decision regarding pilot testing versus critiquing the instrument should be made following discussion with the researcher's advisor. The advisor and/or dissertation committee, as well as the Human Subjects Committee should

always approve the final form of the instrument, as well as material to be pilot tested, before it is distributed.

Data Collection

This section describes in detail how the data will be/were (proposal/final dissertation) obtained and the timelines involved in collecting the data. Information commonly provided in this section includes what materials will be/were distributed (e.g. survey instrument, cover letter, instruction sheets, self-addressed stamped envelope, etc.), how they will be/were distributed (e.g. mailed to each participant, mailed to someone who distributed them to each participant, etc.), and when they will be/were distributed (e.g. all surveys were mailed on July 12, 1994, with a follow-up survey sent to all nonrespondents three weeks later). Beginning and ending dates for data collection are often included in this section.

Data Analysis

This section of Chapter 3 describes in detail treatment and analysis of the collected data. Methods of data analysis are primarily determined by the hypotheses to be tested or research questions to be answered (which also determine the format of the instrument and how the data are gathered) and the level of data being gathered (nominal, ordinal, and/or interval). When several hypotheses/research questions are being addressed, it is helpful to describe the data analysis that will be used for each hypothesis/research question. For example:

1. A response to research question one, regarding teachers' perceptions of instructional materials, will be generated by computing means and standard deviations for each survey item.

2. A one-way analysis of variance will be used to determine if significant differences in perceptions exist between elementary and secondary principals comprising the study sample (research question two).

3. Null hypothesis three, that no significant correlation exists between student gender and intelligence, will be tested by computing a Pearson Product-Moment correlation.

When inferential statistics are employed, it is helpful to identify the independent/dependent variables for each analysis. In addition, any complex statistical procedures being used should be briefly described and its source referenced. Tests of significance should be accompanied by a statement of the level of significance that will be used (e.g. all statistical analyses will use the .05 level of significance). The statistical software package being used, as well as reference to any individuals assisting the researcher with data analysis, should also be stated at the end of Chapter 3.

The most commonly used descriptive statistics include means, standard deviations, frequency counts, and percentages. Among the most commonly used inferential statistics are chi-square, *t* test, analysis of variance (ANOVA), and various correlation coefficients. More complex statistical procedures include analysis of covariance (ANCOVA), multivariate analysis of variance (MANOVA), factor analysis, canonical correlation, multiple regression analysis, and discriminant analysis.

Summary (Optional)

This final section contains a brief summary of the methodology described in Chapter 3. In general, summary sections for Chapter 3 are included only when the methodology section is very long or complex. The summary section should provide a smooth transition to Chapter 4.

Qualitative Research Methodology

The general structure for Chapter 3 previously described should suffice regardless of the specific research methodology employed for the study. However, several comments regarding the specific requirements of reporting qualitative research methodology are in order.

Unlike quantitative research, in which the researcher collects data as an objective and generally passive observer, many forms of qualitative research (e.g. ethnography, historical research, case studies, and grounded theory testing and development) depend much more directly on the researcher as an active participant in gathering data for the study. Additionally, in many forms of qualitative research design, the method(s) by which data are collected and used to draw conclusions is/are as important as the conclusions themselves.

Therefore, it is incumbent upon the qualitative researcher to carefully describe the methodology employed in the data collection phase of the study. The researcher must provide a comprehensive description of the development of the research instrument used to gather data, as well as any changes made in the instrument as the data collection process proceeds. In addition, the researcher's role in the actual collection of data must be clearly articulated to provide a clear framework within which the reader can better understand why certain data are considered relevant to the study and other data are considered extraneous. The subjectivity that is permitted the researcher in qualitative research implies a greater responsibility to articulate to the reader the basis upon which data may be selectively incorporated or discarded during this phase of the study. Finally, the researcher must carefully describe verification steps or processes (such as triangulation or data saturation) used to substantiate that the data selected for inclusion in the study are valid and reliable. In general, the extra flexibility allowed

in qualitative research design requires the researcher to carefully describe how data are collected and utilized within the study.

Please visit <http://www.usd.edu/ahed/qualguide.cfm> for more information regarding qualitative research design and reporting

CHAPTER 4

Findings (or Results)

Chapter 4 provides results of data analyses and findings of the study. (Please note that Chapter 4 is limited to reporting findings and results, and is not the proper place for conclusions or discussion of the findings.) This chapter begins with an introduction (as do all chapters), which delineates the major sections to be included in the chapter, and may include a restatement of the research problem (and may include accompanying hypotheses or research questions). While there is no one "correct" format for dividing Chapter 4, information regarding response rate and respondent demographics (when relevant) is usually reported first, followed by reporting of results of data analysis for each hypothesis/research question.

Response Rate

Before reporting findings from data analyses – especially when dealing with survey research – the response rate is often described. This allows readers to gauge how many instruments were distributed, how many were returned, and what the overall rate of response to the survey was. This section may be included as part of the introduction without a specific section heading.

Demographic Data

Following the introduction (and response rate data), the next section frequently provides demographic information regarding the study population and sample. As most surveys include at least several demographic items, this section provides readers with a picture of the demographic composition of the respondents/participants. Information such as gender, age, position, years of experience, etc. are usually reported in this section. This section may also be

included without a specific section heading, although a heading is helpful to the readers.

Findings

The remainder of Chapter 4 reports finding related to the hypotheses being tested or research questions being answered. A specific section heading should be used for each section in Chapter 4 that reports findings resulting from data analysis.

General Format

In general, data are reported in tabular (tables) or graphic (figures) form accompanied by text describing the salient information contained in each table or figure. See the *Publication Manual of the American Psychological Association*, 5th edition (2001), pp. 147-201 or *Concise Rules for APA Style* (2005), pp. 77-118, for specific information regarding the proper format for tables or figures and the relationship of the tables/figures to the accompanying text. A sample table and figure with possible accompanying narrative for each are included on the following page.

Note that a table is generally limited to columns of numbers with appropriate column headings. Figures usually contain graphics such as graphs, diagrams, or photographs.

It is recommended that extremely long tables/figures or very detailed information not be included within Chapter 4. Due to space requirements (and questionable interest to most readers), it is better to place this information in an Appendix and note in Chapter 4 where the detailed information is located in the

Appendix. (E.g., A four-page list containing each respondent's answers to every survey item would be more appropriately placed in an Appendix, while a summary table showing the item means should be included in Chapter 4. A note such as, "Individual responses to each survey item can be found in Appendix E" would alert interested readers where this detailed information can be found.)

Table 1

A Comparison of Female and Male Perceptions Regarding the Difficulty of EDAD 885

Course elements	Mean responses		<i>t</i> value	Prob.
	Female	Male		
Statistical analyses	4.25	4.50	1.50	.450
Research concepts	4.50	4.00	2.75	.005*
Research terminology	3.25	3.50	1.25	.250
Class activities	3.00	3.75	2.50	.025*

* denotes significant difference at .05.

Data regarding female and male perceptions of the difficulty of course elements for EDAD 885 are summarized in Table 1. In general, both respondent groups considered statistical analyses and research concepts to be the most difficult course elements. When comparing group responses, female students ($M = 4.50$) considered research concepts significantly more difficult than males ($M =$

4.00), $t(50) = 2.75, p = .005$, male students ($M = 3.75$) perceived class activities to be significantly more difficult than their female counterparts ($M = 3.00$), $t(50) = 2.50, p = .025$. No other differences were significant at the .05 level.

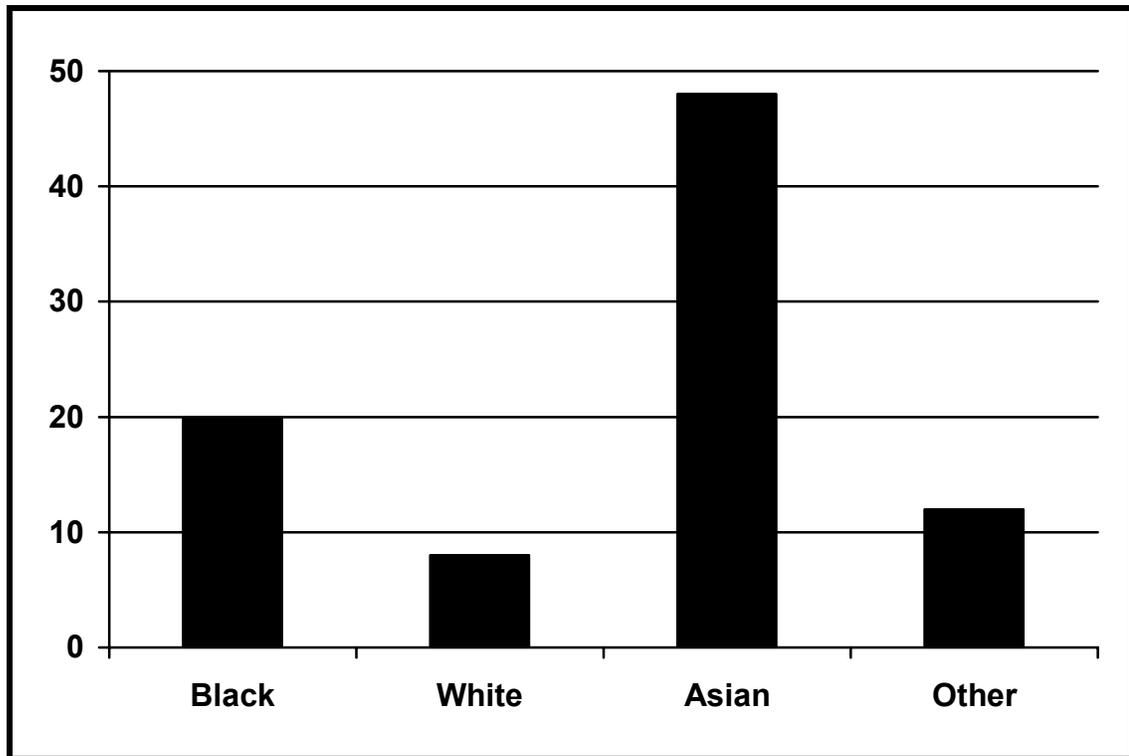


Figure 1. Growth in enrollment of ethnic groups from 1987 to 1997.

Data regarding the growth of ethnic minority groups enrolled in the university during the past decade are presented graphically in Figure 1. Of all ethnic minorities, Asians have shown the greatest enrollment growth (48%) during the past 10 years. During the same period, growth in enrollment for white students (8%) has been slower than for any of the minority groups reported.

(Note: Tables and figures are separated from text by two double spaces – above and below the table/figure, and table/figures usually follow the accompanying narrative..)

Statistical Symbols

When reporting statistical results of data analyses (particularly inferential statistics) it is appropriate to include sufficient information in the table and accompanying text to permit the reader to corroborate the results of the analyses. Therefore, appropriate statistical symbols should be utilized to report these results. (For a complete treatment of this topic see the APA publication manual, 5th edition, pp. 139-147; or pages 69-75 in the Concise Rules).

Within dissertations (and other manuscripts) statistical symbols are italicized. Words, rather than symbols, should be used in the narrative, while symbols may be used in tables and inside of parentheses within the narrative. For example, “The mean of 3.25 for boys was higher than the mean of 3.00 for girls in the sample.” But, “The boys in the sample scored higher overall ($M = 3.25$) than the girls ($M = 3.00$).” Among the more commonly used statistical symbols are the following:

M = mean	df = degrees of freedom
SD = standard deviation	t = t statistic (\bar{t} tests)
f = frequency	F = Fisher’s statistic (ANOVA)
p = probability	r = correlation coefficient (Pearson)
N , n = number	χ^2 = Chi-square statistic

It is also helpful for the reader if some basic information accompanies the statistical results presented in the text. Information usually includes such data as degrees of freedom or sample size. The following examples demonstrate how commonly used statistics would be reported in the narrative.

1. Results of the t test for independent samples indicated a significant difference in mean scores for the boys ($M = 3.75$) and girls ($M = 3.00$), $t(50) = 2.54$, $p = .024$.

2. Results of the chi-square test indicated a significant association between gender and mathematics achievement, $\chi^2(3, N = 48) = 12.54$, $p < .05$.

3. Results of the one-way analysis of variance indicated a significant difference in test scores based upon students' grade levels, $F(2, 124) = 4.24$, $p = .036$.

Summary (Optional)

This final section provides a summary of the highlights of the findings from Chapter 4 and provides a transition to Chapter 5.

CHAPTER 5

Summary, Conclusions, Discussion, and Recommendations

Summary

The Summary section of Chapter 5 provides a brief recap of the entire study. Generally, this section summarizes the introduction, problem statement and hypotheses/research questions, literature review, methodology, and findings. Someone reading this section would have a good overview of why the study was done, the specific purpose of the study and hypotheses/research questions, what the literature relates about the problem under investigation (very briefly), the methods used to gather data for the study, and findings emerging from analysis of the data. Note that the findings are part of the Summary and are not included in a separate section. (When considering submitting research findings for publication, the Summary section of Chapter 5 should serve as an abbreviated format for the manuscript to be submitted.)

While not mandatory, this section is generally subdivided into subsections (with corresponding subheads) related to purpose, literature review, methodology (procedures), and findings. Although there is no "best" length for this section, usually three to six pages provides an adequate overview of the study. If the section gets much longer than this, it fails to remain a "summary." Be aware that too long a summary of the literature review is the most frequent contributor to the summary running longer than needed.

Conclusions

This section presents conclusions drawn from the findings and results of the data analysis. Findings from the present study should provide the primary information for drawing conclusions. Frequently, conclusions provide answers to hypotheses or research questions posed in Chapter 1. While conclusions may be

written in narrative form or listed one at a time, listing them one at a time is generally easier for readers to follow and helps maintain clarity of focus for each conclusion. An important observation regarding conclusions is in order:

Conclusions are not the same as findings and should not simply be restatements of findings from Chapter 4. A conclusion should be broader and more encompassing than a specific finding, and several findings may be incorporated into one conclusion. While several findings may be used to support one conclusion, it is also possible that one finding might give rise to several conclusions (although this is somewhat less common). Generally, while specific findings are stated in the past tense (e.g., students expressed greatest satisfaction with university instructors), conclusions are stated in the present tense (e.g., students are most satisfied with university instructors). The following illustrates the relationship between findings and conclusions.

A study of public school superintendents across the United States in 1991 yielded the following findings:

1. Only 5% were non-White
2. Only 8% were female

From these findings the following conclusion was drawn: *Women and minorities continue to remain underrepresented in the ranks of public school superintendents.* (Note: This conclusion combined both findings into a single broad statement that appears well supported by the study findings.)

Discussion

The discussion section provides a forum within which the researcher explores and attempts to explain findings and conclusions that emerged from the study. Within this section, the researcher attempts to interpret findings and

conclusions, and relate these to both the purpose of the study and to published results from other studies examined in the literature review. This section may be used to forward theories and/or models, or raise questions regarding previously developed theories.

It is important to note that the discussion section in Chapter 5 provides the researcher with one of the very few opportunities throughout the dissertation to explore ideas and possibilities. Unlike most other sections of the dissertation whose content and form are dictated by fairly rigid standards, the discussion section may be open-ended and take the form that researcher desires. Some researchers choose to discuss each conclusion or finding separately, while others prefer to address several or all of them at once in a general discussion.

Recommendations

The final section of Chapter 5 contains recommendations that emerge from the study. Generally, recommendations are of two distinct types; recommendations for action or practice (based on the study's findings and conclusions, and sometimes headed *Recommendations from the Study* or *Recommendations for Practice*), and *Recommendations for Further Study*. Frequently a separate section is included for each set of recommendations – each with an appropriate section heading.

Recommendations for practice are generally prescriptive in nature and address what could or should be done by practitioners or members of the intended audience in terms of professional practice and policy. These recommendations are based upon results of the study. For example,

1. Since male and female teachers rated elements of the professional development program much differently, the administration should provide gender-appropriate training to the teachers that highlights gender differences.

Recommendations for further study contain suggestions regarding follow-up studies or replication studies. These recommendations usually acknowledge limitations or delimitations that the study included and which further studies could help explain or clarify. These might include different methodologies, expanded populations or samples, or changes in the instrument itself. For example,

1. Since the current study was completed using a cross-sectional survey design, a similar study should be planned within the same school that uses a longitudinal design to determine if changes over time become perceptible.

ATTACHMENTS TO THE PROPOSAL/DISSERTATION

References

The list of references following Chapter 5 should include all references that were cited throughout the body of the proposal or dissertation. Conversely, there should be no references listed that did not appear as citations within the paper. (Bibliographies, on the other hand, may include works consulted from which no specific citations were used and should be subdivided into sections distinguishing works actually cited in the text from works consulted but not cited. Please note, however, the APA style dictates a reference list rather than a bibliography.)

The format for listing references is described in detail in the *Publication Manual of the American Psychological Association*, 5th edition (2001), pp. 207-281 (Concise Rules, pp. 125-187), and the same style should be used for references as has been used throughout the dissertation for citations. Careful attention should be paid to the reference section in terms of omissions, extra inclusions, or differences in dates or the spelling of authors' names between the citation and the reference listing. The following examples illustrate the basic reference formats for a periodical and a book.

Coyote, C. (1998). How to survive dissertation research at The University of South Dakota. *USD Journal of Education*, 16(4), 24-36.

Coyote, C. (1998). *How to survive dissertation research at The University of South Dakota: A guidebook*. Vermillion, SD: USD Press.

For the completed dissertation, the reference list commonly contains between 60 and 100 entries (although more or less are frequently found).

Appendixes

The final attachments to the proposal or dissertation are the Appendixes (not Appendices). The Appendixes contain pertinent (and often supplementary) materials that are not important enough, do not fit appropriately in any specific section of the body, or are too long to include in the body of the paper, but which may be of interest to some readers. Common elements found in the Appendixes include a copy of the data-gathering instrument, a copy of the cover letter, copies of any letters of permission required for the study, and tables that are very long or of only minor importance to the study. A copy of the Human Subjects Committee approval sheet may also be included in an appendix.

A FINAL NOTE

The ultimate form and content of the proposal and dissertation will be determined by the doctoral advisor, committee members, and the researcher. Each student, therefore, should work closely with their advisor and committee members and clarify any questions or problems as soon as they arise.

Appendix A

Sample Proposal Title Page

(2" from top to title)

PERCEPTIONS OF UNIVERSITY OF SOUTH DAKOTA
STUDENTS REGARDING EDUCATIONAL RESEARCH

by

Charles Coyote

B.A., University of America, 1972

M.A., University of the World, 1994

A Proposal/Dissertation Submitted in Partial Fulfillment of
the Requirements for the Degree of
Doctor of Education

Division of Educational Administration
Adult and Higher Education Program
in the Graduate School
University of South Dakota
May 2008
(1" bottom margin)

Appendix B
Sample Copyright Page

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Charles Coyote

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Note: When Table 10 and above are inserted in the list, the decimal points following the 10 align with the decimal points for numbers 1-9. The rule of decimal point alignment also applies to any lists or tables using decimal points.

Correct:

- 9. Summary of . . .
- 10. Summary of . . .

Incorrect:

- 9. Summary of . . .
- 10. Summary of . . .

Appendix E
Sample Dissertation Abstract

ABSTRACT

Charles Coyote, Ed.D., Educational Administration, The University of South Dakota, 2008

An Analysis of Public School Superintendents' Perceptions Regarding the Recruitment and Selection of Principals

Dissertation directed by Dr. Mark Baron

Despite the critical importance of employing the most promising candidates as principals, there is considerable evidence that many school districts lack established procedures for systematic recruitment and selection of principals. This study examined superintendents' perceptions regarding the importance of selected principal recruitment and selection practices, and the criteria by which candidates are judged.

A researcher-developed survey instrument was used to collect data from a random sample of 243 public school superintendents throughout the United States. Five-point Likert-type scales were used to measure respondents' attitudes toward the principal selection process and their perceptions regarding the importance of selected principal recruitment and selection practices and criteria. Computation of item means and rankings indicated that respondents considered development of an accurate job description and systematic recruitment and selection procedures as the most important principal recruitment and selection practices. Candidates' human relations and instructional leadership skills were judged most important as criteria upon which to base selection decisions.

A subsequent principal-factor analysis identified nine dimensions underlying the superintendents' responses that accounted for 55.5% of the total variance. The factors were identified as relevant skills and abilities, local approval of candidates, selection of local candidates, techniques to identify potential

candidates, successful administrative experience, quality of academic preparation, advanced academic preparation, effective interviewing techniques, and candidates' professional activities. A discriminant analysis revealed three factors as significant predictors of group membership on the attitude scale ($p < .05$). The three factors were selection of local candidates, interviewing techniques, and local approval of candidates. A multiple regression analysis revealed that selection of local candidates and interviewing techniques were statistically significant factors ($p < .05$). Finally, a chi-square analysis revealed that years of superintendent experience, student enrollment within the district, and number of principals hired over the past three years were demographic variables that significantly influenced superintendents' overall responses to the survey items ($p < .05$).

This abstract of approximately 350 words is approved as to form and content. I recommend its publication.

Signed _____
Professor in Charge

Appendix F

Sample Dissertation Committee Approval Sheet

DOCTORAL COMMITTEE

The members of the committee appointed to examine the dissertation of Charles Coyote find it satisfactory and recommend that it be approved.

Dr. Mark Baron, Chair

Dr. Wylie Coyote

Dr. Elmer Fudd

Dr. Road Runner

(Note: The chair is listed first and the remaining members are listed alphabetically. If you wish to insert middle initials – do so for all members or none of them.)

Appendix G
Human Subjects Approval

The USD Human Subjects Committee is responsible for examining and approving all research proposals for studies being conducted by USD faculty and students to ensure that study participants are not inadvertently put at risk by participating in your study. Securing approval from the Research Compliance Office (605-677-6184) prior to conducting your study is essential (and failure to do so could result in the nullification of any data collected during your study).

Additionally, nearly all students (and all faculty) are required to complete the CITI Course in The Protection of Human Research Subjects that is offered online through the University of Miami. The certificates of completion for this CITI course (for both student researcher and faculty advisor) must be attached to the application for approval to conduct research that is submitted to the USD Research Compliance Office (301 Pardee Laboratories) prior to initiating the research project. More information regarding the process and forms is available online at <http://www.usd.edu/oorsch/compliance/>.

It is generally advisable to secure Human Subjects approval prior to conducting pilot studies or preliminary studies that require administering them an instrument of any type. In general, Human Subjects approval is sought immediately following approval of the proposal by the dissertation committee.

Each student is required to complete a request form for Human Subjects approval and submit copies of that form with one corrected version of the dissertation proposal. The form is available from the EDAD office.

Appendix H
Instructions for Final Copies of
The Completed Dissertation

Division of Educational Administration, School of Education
Guidelines for Dissertation Distribution

The following are the procedures for the number and distribution of doctoral dissertation copies. Final copies must be printed on 25-50% cotton bond paper. Regular copier or printer paper is NOT acceptable.

Five copies of the dissertation are requested.

Three copies of the dissertation are to be delivered to the Graduate School in unbound form in manila envelopes (one copy per envelope) with an extra copy of the cover page taped to the outside of each envelope. Two copies will be bound and become part of the I. D. Weeks Library Collection. The third copy will be sent in for microfilming and will be bound and will be the copy that is sent to the EDAD Division for our collection.

Two copies will be delivered to Periodicals at the I. D. Weeks Library to be bound (one will be for your advisor and one will be for you, the student). The copies should also be in an envelope with the title page taped to the front of the envelope. Other copies may be ordered according to the student's needs.

The dissertation will be sent in for binding in the envelope it is delivered in so check to make sure it is in correct order. Neither the Graduate School nor the Library will open and check the dissertation envelopes. If a page is upside down, for example, it will be bound that way and the student will be charged the cost to have it rebound right.

Costs

The Graduate School will need a personal check, money order or cashier's check made payable to USD in the amount of \$89.00 which includes \$65.00 for the cost of microfilming and \$24.00 (\$8.00 per copy) for the cost of having the three copies bound. Copyrighting – include an additional \$65.00 (payable at Graduate School) for copyrighting and complete the section in the UMI information booklet.

The cost at I. D. Weeks Library to bind your dissertation is \$8.00 per copy for a copy with standard spine lettering if it is sent to a campus address or if you pick it up after binding. If you want to print the title or other information on the front cover, that cost is an additional \$1.00 per line (approximately 65 characters can be placed on each line). If you want copies mailed to you when they return from the bindery, there will be a UPS shipping fee of \$10 per copy for copies mailed to a USA address (i.e. a total of \$18.00 per copy for binding and shipping to a non-campus address). Copies mailed outside the USA will increase that cost by whatever the additional shipping charges are to the specific location. You may choose the color of your cover within the possibilities offered to us. Lettering is available in white, gold, or black. Payment for binding must be made when submitting your request and must be in the form of a cash, check or money order made out to *I.D. Weeks Library*.

(Note: The bindery makes pickups and deliveries mid-month. So, there is at least a one month turn-around for your order. Additionally, the library does not send shipments out in June, July, or August. You may make your requests during

the summer, but the earliest the copies will be bound and back here is mid-October.

Forms That Need to be Completed

Survey of Earned Doctorate form is submitted with the dissertation and can be picked up at the EDAD Office or Graduate School.

ProQuest/UMI Dissertation Submission Form – The signed agreement form needs to be turned in to the Graduate school. One copy of the abstract and an extra copy of the title page must accompany the UMI form. Copies are available in the EDAD Office or Graduate School. Please note that you now have the option of submitting your dissertation for Traditional Publishing (TR-1 or TR-2) or for Open Access (OA-1 or OA-2). The Traditional Publishing format (which has been the model at UMI for many years) assigns them permission to sell copies of your dissertation to those wanting to purchase them. You are eligible to receive royalties from these sales once a minimum number of copies have been purchased. The fee for the TR option is \$55 (unless you choose to register your dissertation with the US Copyright Office). The Open Access option allows all individuals with access to ProQuest to freely view or download copies of your dissertation. This allows the broadest distribution of your dissertation but precludes you from collecting royalties (and ProQuest from earning profits from individual users). An additional \$95 fee is assessed for the OA options (i.e., \$150 total for the OA options). Finally, for an additional \$65 fee, UMI will register your dissertation with U.S. Office of Copyright. (Remember, you automatically have the copyright on your dissertation without registering it; however, registering

your dissertation with the U.S. Office of Copyright affords you certain legal protections described on the U.S. Office of Copyright website.) Detailed information regarding the TR and OA options can be found at http://dissertations.umi.com/UMI_PublishingOptionsGuide.pdf.

The Graduation Approval Form is completed and submitted to the Graduate School by the EDAD Division so the student does not need to submit this form.

May 2008

Appendix I
Dissertation Credit Guidelines

After completing (or nearly completing) your formal coursework , you will begin to enroll for dissertation credits. The Division has established dissertation credit guidelines to assist you in knowing the appropriate credit hours to enroll in depending on what stage you are in the dissertation process. Enrollment in dissertation credit is by permission of the instructor so you will need to consult with your advisor (and have your advisor's approval) before enrolling in dissertation hours. The following chart summarized the suggested guidelines for aligning dissertation credits with progress on completing the dissertation research and paper.

Credits Taken	Tasks Accomplished
1 – 3	Identified topic and drafted problem/purpose statement
4 – 6	Research and draft literature review
7 – 9	Completed proposal (Chapters 1 – 3) <i>Students should not be allowed to register for more than 9 credits if they have not successfully completed their proposal</i>
9 – 12	Data analysis and drafting Chapter 4
12 – 15	Completion of Chapter 5 and final revision of dissertation