

**Lehman College**

**Division of Education**

**Department of Middle & High School  
Education**

**GUIDE TO**

**The M.S. Project**

**for Empirical Studies**

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## TABLE OF CONTENTS

	Page
LIST OF ILLUSTRATIONS.....	iii
SECTION	
1 INTRODUCTION: RESEARCH AS PROCESS AND PRODUCT.....	1
Research as Process.....	1
Research as Product.....	3
2 GENERAL FORMATS AND HEADINGS.....	6
Margins.....	6
Line Spacing.....	6
Pagination.....	7
Headings.....	7
Final Copy Submission.....	9
3 CONTENT AND SEQUENCE: CHAPTER I.....	12
Background of the Study.....	12
Need for the Study.....	12
Purpose and Problem Statement.....	13
Research Questions or Hypotheses.....	13
Setting the Problem.....	13
Delimitations.....	14
Definitions.....	14
4 CONTENT AND SEQUENCE: CHAPTER II.....	15
Purpose of the Review.....	15
You and Chapter II.....	15
Organization of Chapter II.....	16
Reference Citations in Text.....	18
A Final Word.....	18
5 THE SELECTED REFERENCES LISTING.....	20
Saving Time at the Library.....	20
General Format Conventions.....	20
Preparing Various Citations.....	21
Example of a Listing of Selected References.....	25
6 CONTENT AND SEQUENCE: CHAPTER III.....	26
Traditional Education Research Studies.....	26
Action Research Studies.....	29
Meta-analyses.....	31
7 CONTENT AND SEQUENCE: CHAPTER IV.....	34
Sequence of Content.....	34
Tone and Style.....	35
General Writing Considerations.....	35
Creating Tables.....	36

8	CONTENT AND SEQUENCE: CHAPTER V .....	38
	Sequence and Content .....	38
9	PRE-CHAPTER I MATERIAL .....	40
	Title Page .....	40
	Abstract .....	40
	Table of Contents .....	41
	List of Tables and Figures .....	41
	Acknowledgments .....	41
10	POST-CHAPTER V MATERIAL .....	46
	Listing of Selected References .....	46
	Appendices .....	46
11	THE EDITING PROCESS .....	47
12	SELECTED REFERENCES FOR THIS GUIDE .....	49

## LIST OF ILLUSTRATIONS

ILLUSTRATION		Page
1	Levels of Headings	8
2	Pages 1 and 2 of Chapter 1	10
3	Listing of Selected References	25
4	Format for Tables	37
5	Format for Title Page	42
6	Format for Table of Contents	43
7	Format for List of Tables	45
8	Proofreaders' Marks	48

## SECTION 1

### INTRODUCTION: RESEARCH AS PROCESS AND PRODUCT

#### Research as Process

Graduate students using this guide are engaged in a process leading to a report of empirical or scholarly research or to the development of a curriculum project.

A student seeking a Master of Science in Education degree from the Department of Middle and High School Education may undertake one of several genres of studies:

1. Empirical studies, the search for **dependable** solutions to educational problems through planned and systematic collection, analysis, and interpretation of data.
  - a. Traditional education research, which typically involves hypothesis testing, quantitative methods and comparing experimental and comparison groups. Possible research designs in this category include meta-analyses as well as quasi-experimental, correlational, or descriptive studies.
  - b. Action research: an examination of a teacher-generated classroom-based problem. An action research question is open-ended, phrased to generate a broad range of insights or understandings rather than to prove a specific point or to compare experimental or control groups. Research methods can be qualitative, quantitative, or both.
2. Curriculum development: the development of a curriculum unit. This type of study is permitted in the science education, mathematics education and TESOL programs only.
3. Scholarly studies, involving intensive and comprehensive library and Internet research. This genre includes:
  - a. Historical studies: in-depth historical treatments of educational issues. (For example, the history of bilingual education, of the teaching of evolutionary theory in the public schools of New York City, of the charter school movement.)

- b. Author studies: analysis of literary works as the basis for understanding an author. **This genre is limited to students in English education.**
- c. Thematic studies: in-depth analyses of a particular issue in education or of a particular question in your subject. (For example, descriptive versus prescriptive grammar in the English classroom, solving word problems in mathematics, tracking students versus multi-ability grouping.)

Planning and systematizing the research study are conceptual **processes** involving several sequential steps. For empirical studies:

1. Identify a topic area in which you are interested and which has the potential of generating research useful to teachers and students.
2. Thoroughly review the published and unpublished literature on your topic to determine what research has already been done and for suggestions about problems still needing study in your topic area. This search also enables you to set your problem statement in the context of what has already been researched about your variables and to determine operational definitions.
3. Identify a problem statement and its component research questions or hypotheses in the topic area you have chosen.
4. Establish procedures for collecting data.
5. Determine how data are to be analyzed and presented.
6. Interpret findings to the profession.

Scholarly studies generally involve research into both primary and secondary sources of information. The process involves the following stages:

1. Identify a topic area in which you are interested and which has the potential of generating research useful to teachers and students.
2. Review the published and unpublished literature on your topic to determine what research has already been done, to equip you with the background of knowledge required to carry out your research, and to report to your readers on the information they need to understand your research. You should also become familiar with the respected authorities in your field and of scholarly evaluations of the line of research you intend to follow. For example, what is the prevailing view of how reliably authors reveal themselves

in their works? How soundly based are current received opinions about your topic?

3. Identify a problem statement and its component research questions in the topic area you have chosen.
4. Engage in the research activities of locating and evaluating sources, taking and classifying notes, and establishing the major divisions of your study. You will probably discover that your research uncovers avenues of further research you had not anticipated and that the material you uncover will suggest the form of the report.
5. Determine the final organization and form of presentation of your report.

For curriculum projects:

1. Identify the long-term aims of the unit. Identify the larger goals and performance objectives to which it will contribute.
2. Review the literature on your topic, including curriculum guides, to determine the need for the development of your unit and to establish current practices in teaching the material and concepts your unit will cover.
3. Identify relevant specific student performance and content standards. Establish grade level standards and specific objectives.
4. Develop the curriculum, including detailed lesson plans, assignments, handouts, enrichment activities, and testing procedures.
5. Develop a teachers' guide to help teachers use the curriculum you have developed.

For all genres, conclude by reflecting on what you have done, making recommendations to the profession, and stating your conclusions (where appropriate).

### **Research as Product**

The **product** of research is a formal written report. At the master's degree level that report is called a thesis or report.

Commonly accepted conventions of writing, organizing, and formatting guide your preparation of the thesis. The report is

usually organized into five distinct sections, labeled chapters, each of which is concerned with a specific aspect of your research study:

**Chapter I** introduces the reader to your topic area. It includes the background, need for the research, your problem statement and research questions or hypotheses, delimitations you have imposed on the scope of the study, and operational definitions of variables.

**Chapter II** presents a synthesized review of the related literature as it pertains to your problem statement.

**Chapter III** in empirical studies identifies the methodology you used to identify and select your sample, to develop or select data-gathering instruments, and procedures used to collect data. In scholarly studies, it is the first chapter of your research into your research questions. In curriculum studies, it is the full description of the curriculum, including lesson plans. (Note that scholarly studies may require more than two chapters for the presentation of the research. In that case, the chapter numbers will change accordingly.)

**Chapter IV** presents the research findings of empirical studies in organized form. For scholarly studies, it is the second chapter of research into the research questions. In curriculum studies, it is a teacher's guide to the curriculum.

**Chapter V** presents a summary of your findings, your interpretation (conclusions) of what the findings mean, and recommendations about professional use of the findings and the need for further research in the topic area. Curriculum studies will present reflections rather than conclusions; scholarly studies will present reflections either in addition to or in place of conclusions.

There is no set number of pages required; your project advisor will decide what is adequate. However, most reports are between 40 - 80 pages long.

The formal written report also contains pre-Chapter I material and post-Chapter V material. Before Chapter I you will present a title page with an abstract of the study, a table of contents, and listings of tables and figures. You may include, if you wish, a page for acknowledgments. After Chapter V you will present a listing of selected references and any material which is appended to the report (for example, a copy of the questionnaire, an interview schedule, the pretest, the posttest, a cover letter to the population sample, or a follow-up to non-respondents).

Each of these components of the thesis is written and formatted in formal ways. This handbook is intended as a guide for you as you develop each component. The basis for the format requirements specified in this guide is the Publication Manual of the American Psychological Association (APA). Use it and this guide to clarify and simplify the "how" and "what" questions of thesis preparation. Since

the report you are writing results in a finished bound document in the college library, some conventions differ from APA; in such cases, follow this guide exactly.

## SECTION 2

### GENERAL FORMATS AND HEADINGS

This section presents information about general formats and headings to use for the thesis. Included are instructions for margins, line spacing, pagination, headings, the presentation of the final copies of the report, and an example of properly formatted pages 1 and 2 of Chapter I.

#### Margins

Because the entire document will be bound, use 1.5-inch left margins and 1-inch right margins throughout the thesis. The bottom margin should be uniformly 1 inch. Top margins will vary: The first page of each chapter will begin 2 inches from the top edge of the paper; all other pages have 1-inch top margins.

The same rule applies to pre- and post-chapter material: The first page of the Table of Contents, Abstract, List of Tables, List of Figures, Acknowledgments, and Selected References begins 2 inches from the top edge of the paper; all subsequent pages for each section have a 1-inch top margin. The side margins for pre- and post-chapter material are 1.5 inches on the left and 1 inch on the right.

An illustration of the first two pages of Chapter I of a thesis is provided on pages 8 and 9.

#### Line Spacing

Most of the text of all five chapters is double spaced (DS), but there are two exceptions: (1) Lengthy quotes from the literature are single spaced and double indented (indented an additional five spaces from both the left- and right-hand margins). According to the Publication Manual of the American Psychological Association, lengthy quotes are more than 40 words, usually more than four lines of text. Here is an example:

Keyboarding is a complex psychomotor skill which is most efficiently learned if a speed approach is used. Research has shown that the presentation of the alphabetic keyboard should be accomplished within

10 days; then use a period of four to five weeks to refine the skill and develop speed (Lundberg, 1994).

(2) Enumerated listings which are "free standing" and are not presented within a larger paragraph are also single spaced and double indented. An example is provided below:

1. The first enumeration is typed with the number indented five spaces and the second and all subsequent lines aligned with the first letter of the first word.
2. A double space is left between enumerations. For example, note the blank line between Enumerations 1 and 2 in this example.

### **Pagination**

Chapters I through the last page of Chapter V, Selected References, and Appendices are numbered consecutively with Arabic numbers.

Page numbers appear in one of two places: They may be placed in the upper right corner, 1 inch from the top edge of the paper and at the right margin point (7.5 inches) or they may be placed at the bottom center, 1 inch from the bottom edge of the paper.

Conventionally, the actual page number does not appear on the first page of each chapter: The page number is suppressed on the first page of Chapters I, II, III, IV, and V. Also, the page number does not appear on the first page of the Selected References section.

Pre-Chapter I material is numbered in a different way. Beginning with Table of Contents, use lower case Roman numerals (i, ii, iii, iv, v, etc.) until all pre-Chapter I material has been numbered. The number appears at the bottom center of the page, 1 inch from the bottom edge of the paper. The number does not appear on the first page of the Table of Contents, even if it is only one page long.

### **Headings**

Several levels of headings are used in theses. The importance of the heading is denoted by its placement on the page, spacing above and below the heading, and the use of capital letters. Headings may be in bold face letters or not. However, you must consistently type headings in bold face throughout the document if you choose that option. To minimize the risk of error, you may find it easier not to bold face headings. Examples of headings used are shown below and on

the next page. Level One headings are the most important, followed by Level Two, and so on.

### **Level One Headings**

Level One headings are centered with solid capital letters. Double space (DS) after the heading. If there is more than a single line in the heading, or if the chapter heading is followed by a chapter title, double space (DS) between the lines. Level One headings are used for chapter headings and chapter titles.

### **Level Two Headings**

Level Two headings are centered with initial capital letters. Double space (DS) after the heading. Level Two headings are used to introduce important sections of a chapter.

### **Level Three Headings**

Level Three headings are typed at the left margin with initial capital letters. Double space (DS) after the heading and underscore the heading. Level Three headings are used for subsections of important sections of a chapter. Except in extraordinary circumstances, the thesis should not contain headings other than Level I, II, and III.

### **Level Four Headings**

Level Four headings are indented and underlined. Only the first word of the paragraph heading is capitalized. A period is used to end the heading. Text resumes two spaces after the period. Level Four headings are used for subsections of Level Three headings.

Illustration 1, shown below, provides examples of each of these levels of headings:

#### **Illustration 1**

##### **Level One**

CHAPTER I  
(DS)  
INTRODUCTION  
(DS)

##### **Level Two**

(DS)  
Need for the Study  
(DS)

### Level Three

(DS)  
Research Questions  
(DS)

### Level Four

Heading levels. A level one heading is used to introduce each chapter in the thesis.

### **Fonts**

Use Times, Times New Roman, or Arial, 12-point.

### **Final Copy Submission**

When you complete your thesis, you will present it to your project advisor for his/her approval. After your advisor approves and signs the final copy:

- a) Submit one (1) bound copy on 20-pound bond paper that has a fiber content of at least 25%, for the department library. Most office supplies stores (e.g. Staples) will do an adhesive binding, which is the best kind. If your store cannot do the adhesive binding, ask for a Velo binding.
- b) Submit two (2) CD's to your reader:

The first, for your reader, should be labeled with your name, the title of your thesis, and the date. It can be in either .pdf, or WordPerfect or MSWord .doc format.

The second, for the library, should be prepared according to the following guidelines:

1. Label the CD with the year, title, and name of student, name of department, course code, and course number.
2. Accompany the CD with the print (paper) cover page of the thesis.
3. Submission in PDF is preferable to Word formats to maintain the integrity of the material on disc.

## **Illustration of Pages 1 and 2**

The first two pages of Chapter I of a thesis are illustrated below. Permission to reproduce these pages was granted by Megan Mastropolo (1993, pp. 1-2).

### **Illustration 2**

#### **CHAPTER I**

#### **INTRODUCTION**

##### **Background of the Study**

Paired reading is a reading strategy that is used to increase the amount of time engaged in oral reading. The purpose of paired reading is to teach and entertain. This reading strategy is a type of cooperative learning in that heterogeneous pairs, of varying abilities, work towards a common goal. Paired reading also integrates some aspects of peer tutoring. The combined aspects of peer tutoring and cooperative learning make paired reading a strategy that can have positive effects on readers' self-esteem and attitudes towards reading. If the positive attitudes are nourished, reading could be viewed as an enjoyable process.

Paired reading is a tutorial reading technique that originally was designed for parents to use within the home. The technique relied heavily on parental involvement and an environment that did not foster anxiety regarding the reading process. Pumfrey (1986) recognized that parental involvement was an important factor in educating children in that it had potential to bring about increases in reading achievement and reading attitudes. This paired reading process could have the

same results within a classroom using a cooperative learning experience.

### **Need for the Study**

There is a tremendous need to improve attitudes towards reading in city schools. The average reading scores have been steadily declining for five years because students are no longer exposed to reading as they once were. In an age of video stimuli, reading is fast becoming a lost art.

Educators must realize the issues of children's abilities and motivations to read. Some children have low academic success rates because their needs are not met. These children need experiences that will motivate them. Attitudes toward learning will change when children are motivated to learn. This occurs through well-planned educational experiences (Madden, 1988).

Cooperative learning situations can motivate children and improve attitudes. They allow cooperative and small group experiences as opposed to a competitive and individualistic approach.

### **Purpose Statement**

The purpose of this empirical study is to see what effect paired reading has on the attitudes of sixth grade students.

## SECTION 3

### CONTENT AND SEQUENCE: CHAPTER I

Chapter I describes and justifies your planning of the proposal. Its title is INTRODUCTION. The heart of the chapter is the "Purpose and Problem Statement" section, which is usually not lengthy. Yet that paragraph is the mechanism which propels and defines all the research methodology, findings, analysis, and interpretation which appear in the following chapters. The "Purpose and Problem Statement," thus, is CRITICAL. You must write it accurately, clearly, and unambiguously.

#### **Background of the Study**

A few introductory paragraphs are needed in order to introduce the reader to your rationale for selecting the area you are going to study and to place its significance in the context of education. Generally, the introductory paragraph material should support your problem statement in the ways identified in the next paragraph:

It introduces the reader to the topic and problem area. You might wish to relate how the profession has been talking about the problem or actually taking initiative to do something about it. Citations of other researchers/critics are absolutely essential here to validate the points you are making and to document your own proposed research.

At the end of the "Background of the Study section" introduce the reader to your proposed research study so that he or she has the necessary framework to understand the need for your study.

#### **Need for the Study**

This section identifies for the reader the PROFESSIONAL NEED for the study. (Your need to complete a research project in order to receive an M.S. degree is "insignificant" for this purpose and MUST NOT BE DISCUSSED.) This professional need may be based on perceptions you have had, given your experiences; but you must relate it as a need perceived by the profession. Again, it is highly appropriate to reference and document statements you make here since a cumulative

demonstration of need to study the problem has more validity and "significance" than your opinion.

Often researchers need to identify professional interest more generally than the professional field of their subject area. For example, CUILTY (1989) wanted to study the relationship between students' learning styles in Introduction to Occupations classes and the lesson pattern and learning activities provided by the teacher. Since most of the interest and research in this area was provided by psychologists, educators, and school administrators who were studying left-brain/right-brain dominance, his related literature search was conducted in educational areas which were more general than his field, business education. You may need to search out relevant articles and studies from any of the social sciences in order to demonstrate both professional interest in and need for the problem statement area.

### **Purpose and Problem Statement**

Usually one paragraph is sufficient to provide both purpose and problem statement. Here you tell the reader EXACTLY what it is you propose to do. The paragraph frequently begins in this way: "The purpose of the proposed research is to . . ." and here place your problem statement in declarative form. The problem statement as question is useful for your planning, but generally researchers write it as a declarative sentence in the document. Identify the type of study - empirical, scholarly, curriculum or classroom action research - that you are conducting.

### **Research Questions or Hypotheses**

Research questions or hypotheses are enumerated listings of the elements of the problem statement which require separate collection and analysis of data or which identify interpretation which must be done. The listings are based on the dependent and independent variables contained within your problem statement.

The research design you select dictates whether this section is called "Research Questions" or "Hypotheses." Descriptive, scholarly, and action research should provide research questions. Experimental and correlational studies should provide hypotheses. Usually the listing is not lengthy, typically ranging from 2 to 4 enumerated questions/hypotheses. Your guide is the separateness of data collection and analysis required to solve your problem.

### **Setting the Problem**

The text material which follows the "Purpose and Problem

Statement" section further defines ("sets") your research proposal for the reader. Here you tell the reader two basic kinds of information:

### **Delimitations**

Describe in enumerated form or text narrative the way in which you have circumscribed (delimited) the research: the subjects to be studied, the instrument to be used, the geographic region in which you are collecting data, the age group, the grade level, the language background, or whatever, of your subjects.

In addition to IDENTIFYING the proposed delimitations, you should provide a rationale for them.

### **Definitions**

This section should contain several types of definitions.

1. Technical Terms. Terms that might be unfamiliar to educators who are not specialists in your field should be defined to illuminate how they are used in your study. For example, the term "stable irony" used in an author study, or the term "sheltered instruction" in a TESOL study.
2. Operational Definitions. All variables contained in your hypothesis or problem statement must be carefully defined based on observable characteristics. That is, what are the measurable or observed characteristics of change in performance or attitude that you are seeking. An example is a dependent variable labeled "achievement." You must define for the reader what "achievement" means to you in the context of your study; what is the measure or characteristic/s that will identify "achievement"?
3. Acronyms must also be defined for the reader. For example, Lehman High School has a WOW program, probably referred to as "WOW" by the teachers and staff at that school and no doubt understood by them. The typical reader would not know that WOW refers to World of Work, an after-school program which introduces high school juniors and seniors to the real office through field trips and guest lectures by organizational office workers.

## SECTION 4

### CONTENT AND SEQUENCE: CHAPTER II

1. For empirical studies, Chapter II, titled RELATED LITERATURE, summarizes the published and unpublished research which is pertinent to your problem statement. In particular, your related literature must address each of the questions or goals of your study.
2. For scholarly studies, this chapter summarizes the literature which sets the problem or questions but does not resolve them.

#### Purpose of the Review

Several major purposes are served by the review of the related literature: (1) You identify for the reader the research in the field which has already been done on your questions; (2) You demonstrate your familiarity with exemplary models and/or debates about pedagogy in your field; (3) You describe the existing knowledge about your topic/problem statement and variables; (4) you identify the conclusions that can be drawn from this literature; and (5) you show how a void is to be filled by the research you plan to do.

There are secondary purposes for the review of related literature, too. Previous studies should be used as a comparison with yours. They may either support or contradict your conclusions.

Another secondary purpose may be very important. If you are using a specific research design or methodology that is modeled on someone else's work, you should describe that work. For example, if you were to study the language of a classroom for the purpose of determining cognitive requirements made on students by the types of questions asked by the teacher, you would have to describe in some detail the purpose and design of the "Language of the Classroom" study conducted by Arno Bellack and his associates at Teachers College, Columbia University, during the early 1960's.

#### You and Chapter II

You should keep in mind three important points about the writing of Chapter II. First, the organization of the chapter and the clarity

of your synthesis should DEMONSTRATE to the reader that you have a mastery of the literature of the field.

The second point is equally important. You should not have a lengthy bibliography and little or no evidence that much has been done with the references in your text. Likewise, you should not have a lengthy Chapter II with few reference citations in your text. If there is no literature bearing on the problem, you should review the studies closest to the problem and show why they fall short.

Finally, the review of the related literature is not a series of connected or disconnected annotations of each article. Rather, the information you wish to convey must be synthesized for the reader and MUST BE ORGANIZED thematically and topically, usually on the basis of your research questions or the variables being studied.

Chapter II should be at least ten (10) pages long.

Read the next section, "Organization of Chapter II," very carefully when you prepare to write Chapter II.

### **Organization of Chapter II**

Chapter II is organized on a foundation of knowledge already available to you through the library. Demonstrating your ability to describe the foundation clearly and in an organized way is paramount.

Any number of organizational schemes have been used for presenting the related literature in topical/thematic form. You may wish to review theses/dissertations already completed to get ideas about how others have decided to present the foundation. But you must be comfortable with your organizational scheme and it must make sense for your study.

Chapter II and subsequent chapters always begin with a restatement of the problem statement presented in Chapter I. You do not need to directly quote the problem statement; in fact, finding a fresh way to state the purpose of your research may be helpful to you. The reason problem statements are restated is that most readers do not read the entire document. They select chapters which interest them or which are most useful to them. No doubt you will read other studies in a similar way, and you will be grateful if you have the purpose of the study presented to you as you begin to read a chapter.

A second paragraph tells the reader about your search and in very general terms what you found or did not find. The purpose of this section is to describe how you conducted your literature search. E.g.,

- Online databases

- Keywords used for searches
- Libraries
- Colleagues and experts in your field
- Course and other bibliographies
- Professional organization or other websites

Below is an example. Please note that although this author does not refer to colleagues, experts, or websites, you should do so if they have served as important resources for your review.

"A keyword search revealed topics related to portfolio assessment, student attitudes toward learning, urban ESL middle-school students, and self-esteem. The following sources were used: the CUNY Plus database; the Educational Resources Information Center (ERIC), both on CD-ROM and from AskERIC; Infoseek; NEXIS; and the web site for the Center for Applied Linguistics ([www.cal.org](http://www.cal.org)) TESOL and other publications, *including Reading Research Quarterly, TESOL Quarterly, Adolescent and Adult Literacy, Writing Assessment, Studies in Second Language Acquisition, TESOL Journal, Educational Leadership, and Educational Assessment*; other City University of New York colleges, and public libraries."

The initial section of the review itself should look at exemplary practices or issues in your field, and relate them to your study. The kinds of topics discussed in following sections will depend on your study. This material must be organized logically and clearly. Three methods are frequently used:

1. Organize subsections of the report based on your listing of research questions, hypotheses or goals in Chapter I.
2. Organize subsections of the report based on your independent variable(s) and dependent variable(s) and relationships between them which have been established in the literature.
3. An historical overview of the degree of interest in and attention to the topic area is appropriate if you can uncover related literature to show that. You might wish to do a "dimension of historical time" to show periods of intense interest, a modicum of interest, no interest, and influences on the degrees of interest.

A final section of the report is labeled "Summary of the Literature." In it you present a brief summary of information from each of your sub-sections. You should then discuss your evaluation of

this literature and how your research extends this body of knowledge. However, hold off making evaluative statements until your research is completed.

### Reference Citations in Text

Citation of another author's work in your text documents your work, identifies the source for readers, and enables readers to locate the source of information in the alphabetical reference list contained in your Selected Reference section. (See the Publication Manual of the American Psychological Association for a detailed listing of how to handle reference citations in text.)

Two ways of presenting citations are commonly used:

Author-Date method: In a recent study of reaction times (Cantor, 1994) . . .

Date method: Cantor (1994) compared reaction times . . .

A work by two or more authors may be cited using either method:

Author-Date method: As has been shown (Bank, Patti & Taback, 1996) . . .

Date method: Bank, Patti, and Taback (1996) showed . . .

Direct quotations used in your text must also include the page number from which the quotation has been taken, thus:

Author-Date method: Some experts strongly support offering keyboarding at the secondary school: "Keyboarding is a must for all high school students" (Dingle & Palmer, 1995, p. 11).

Date method: Dingle and Palmer state, "Keyboarding is a must for all high school students" (1995, p. 11).

### A Final Word

Show your scholarly competence. Writing this section well is a sign that you have a good grasp of your subject and that you are willing to undertake professional responsibility for reporting the literature accurately. These suggestions will help you prepare Chapter II:

- Be careful about grammar, punctuation, and spelling.

- Be precise about citations, especially page numbers from which direct quotes have been extracted.
- Use headings to guide your reader along the way.
- Use clear language; avoid very lengthy, complex sentences.
- Include your own opinion sparingly and only after you have first summarized the research you are critiquing. Until the final summary, your primary role is that of journalist, reporting facts and experts' opinions.

## SECTION 5

### THE SELECTED REFERENCES LISTING

The selected references listing identifies the professional literature that supports your report and provides the information needed to identify and locate each source. This section is a very important part of your thesis, as you have no doubt discovered from your own library search.

"Selected" is deliberately chosen to describe the reference listing because you should not list every source you consulted in the library. Only those references which have been cited within your thesis should be listed. When you are preparing the final version of the list, take care to compare the list with every chapter to ensure that you have a complete citation for all references you have used within the report.

### Saving Time at the Library

Because the selected references listing is so important, unusual care must be taken to prepare each citation accurately. Your library note-taking skills can help you considerably in preparing this section and save you countless hours of time spent in looking up specific pieces of data, such as a page number, a volume number, or the correct spelling of an author's name. You will find it very helpful to prepare and duplicate a form on which you can record all pertinent facts of publication which must be included in the selected references list.

### General Format Conventions

The related literature listing is prepared in hanging indented style. The first line of each citation begins flush at the left margin. Each succeeding line of the citation is indented five spaces. Each citation is single spaced; double space between each entry. The listing is prepared alphabetically by the surname of the first author. Sources without authors are arranged alphabetically by title within the same list. Only the first word of titles of articles and books is capitalized, along with words that would ordinarily be capitalized in

text, such as English and Spanish. All important words in titles of periodicals and web pages are capitalized.

The *Publication Manual of the American Psychological Association* provides a rather complete section on how various documents and oral interviews should be handled in the selected references section. Useful examples are also given. Also consult the *APA Research Style Crib Sheet* (Dewey, 2003).

## Preparing Various Citations

### Periodicals, One Author (Print, Electronic Copy)

The sequence for listing elements of a one-author journal article is as follows: Surname of the author, first name initial, date of publication, title of the article, title of the journal, volume number, issue number, and the pages on which the article appears. The following example shows how these elements of the citation would appear in the selected reference listing:

Holmquist, D. (1993, April). Responding to the call for change. *Business Education Forum*, 47(4), 7.

If an exact copy of the article is retrieved from the internet, add "[Electronic version]":

Holmquist, D. (1993, April). Responding to the call for change [Electronic version]. *Business Education Forum*, 47(4),7.

If the document has been changed in any way, including the elimination of page numbers, the listing should be as follows":

Holmquist, D. (1993, April). Responding to the call for change. *Business Education Forum*, 47(4), 7. Retrieved February 26, 2004, from <http://www.bef.org.html>

### Periodicals, Multiple Authors

List all authors, using surnames and initials, regardless of number. Use an ampersand (&) before the last author. Here is an example:

Van Auken, S., Cotton, C. C., McKenna, S. F., & Yeider, R. (1993, May/June). Business research: Perspectives of deans of AACSB-accredited business schools. *Journal of Education for Business*, 68, 261-265.

### Report from Educational Resources Information Center (ERIC)

ERIC is a document deposit service. The document number is enclosed in parentheses at the end of the entry. Do not use a period within the parentheses after the document number. Note the following example:

Hollister, R. (1989). *Black male youth: Their employment problems and training programs*. (Report No. CE-054-094). Washington, DC: Department of Labor Commission on Work-force Quality and Labor Market Efficiency. (ERIC Document Reproduction Service No. ED 317 678)

### **Books, One Author**

The sequence for listing elements of a one-author book is as follows: Surname of the author, first name initial, date of publication, title, city of publication (add the state only if necessary for clarity), and publisher. The following example shows how these elements of the citation would appear in the selected reference listing:

Wineapple, B. (2003). *Hawthorne: A life*. New York: Alfred A. Knopf.

### **Books, Editions Other Than the First**

Add the number of the edition in parentheses after the title:

Smith, F. (1994). *Understanding reading: A psycholinguistic analysis of reading and learning to read*. (5th ed.). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

### **Books, Reprinted**

Add the date of original publication after the publisher:

James, H. (1967). *The portrait of a lady*. New York: The Heritage Press. (Originally published 1881)

Note: This work would be cited in your text as "(James, 1881/1967)."

### **Books Published by an Association**

Alphabetize corporate authors by the first significant word of the name. When the author and publisher are identical, use the word Author as the name of the publisher. For example:

American Psychological Association. (2001). *Publication Manual* (5th ed.). Washington, DC: Author.

Often you may have a reference to an article or chapter in an edited year book. Note the elements of the listing shown below:

Lowery, S. (1993). Leadership in the proprietary school environment. In M. Bush & H. P. Taylor (Eds.), *Developing Leadership in Business Education* (pp. 137-144). Reston, VA: National Business Education Association.

### **Articles, Essays, or Stories in an Edited Book**

Surname of the author of the article, first name initial, date of publication of the book, title of the article, the word "in" followed by the last name and initial of the book's editor, book's title, city of publication (add the state only if necessary for clarity), and publisher. You may add the date of original publication of the article after its title. The following example shows an essay printed in a collection long after its original publication:

Arnold, M. (1963) The function of criticism at the present time (Originally published 1864, In Beckson, K. (Ed.) *Great theories in literary criticism* (pp. 290-312). New York: Farrar, Straus and Company.

Note: This work would be cited in your text as "(Arnold, 1864/1963)."

### **Proceedings of Meetings**

Often research papers are presented at conferences or conventions and are published as part of the proceedings of the event. The following example shows you how to cite a report taken from proceedings:

Schmidt, B. J. (1990). Assessing the preparation for teaching office reading skills. *Proceedings of the 1990 Delta Pi Epsilon Research Conference* (pp. 49-52). Little Rock, AR: Delta Pi Epsilon.

### **Unpublished Paper Presented at a Meeting**

Occasionally you will have an opportunity to use material presented by a speaker at a conference or convention whose paper is not published in official proceedings. The following example shows you how to cite such a paper:

Palmer, J. J. (1992, October). The new world order and new wave offices: Business education's challenge. Paper presented at the meeting of the Eastern Business Education Association, East Brunswick, NJ.

## Newspaper Article

Sometimes newspaper articles contain current facts, trends or other data which you may want to use, especially if your topic area is very timely. The following examples show you how to cite various articles:

Newspaper article, no author:

High Schools Are Violence Prone. (1994, May 3). *The New York Times*, A23.

Newspaper article, discontinuous pages:

Jackson, A. S. (1994, August 26). The Discomfort of the Middle Class. *The New York Times*, A1, B8.

## Internet Sources

Today many researchers use the Internet as a means of collecting related literature. The sequence of components of the citation and punctuation are identified below. For an article retrieved from a journal published exclusively on line, follow this form if the journal is paged by issue:

Bradshaw, R. (2001). Teacher education in Sweden. *Comparative Education Review*, 5(3-12). Retrieved February 26, 2004, from <http://www.comped.org/vol5no3/bradshawe.htm>

If the journal is not paged, identify the material by section title, paragraph number, or other indicator.

For a web page:

Dewey, R. (2003) *APA Research Style Crib Sheet*. Retrieved February 27, 2004 from [http://www.wooster.edu/psychology/apa\\_crib.html](http://www.wooster.edu/psychology/apa_crib.html)

Note that a period does not follow a URL in a reference.

### Example of a Listing of Selected References

Illustration 3 below provides an example of a partial listing of Selected References which may be useful as a guide as you prepare your own listing

#### Illustration 3

##### SELECTED REFERENCES

- Achilles, C. M. (1997, October) Exploring class-size research issues. *The School Administrator*, 54(9),1-3.
- Ayala, F. J. (2000, February) Arguing for evolution. *The Science Teacher*, 67(2), 30-32.
- Holt, M. I. (1992). *The orphan trains: Placing out in America*. Lincoln, NE: University of Nebraska Press.
- Landis, C. (1996). *Teaching science in the field*. Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Education (ERIC Document Reproduction Service No. ED 402 154).
- Leopold, L. B., Wolman, M. G., & Miller, J. P. (1995). *Fluvial processes in geomorphology*. New York: Dover Publications. (Originally published in 1964.)
- Ousten, R. D., Murphy, S., & Wideman, H. H. (1990). *Effects of Word Processing on Student Writing in a High Computer Access Environment*. (Tech. Rep. No. 90-1) North York, Canada Centre for the Study of Computers in Education, York University.
- Shaywitz, S. (2003) *Overcoming dyslexia*. New York: Random House, Inc.

## SECTION 6a

### CONTENT AND SEQUENCE: CHAPTER III

Traditional education research studies, action research studies, and meta-analyses will be discussed separately in this section.

#### **Traditional Education Research Studies**

The procedures section of your project report contains a detailed description of the steps taken to identify and select your sample and to collect the data. It includes a description of the subjects (sample) you used and instrumentation (data-gathering instruments or measuring tools). For experimental studies a complete description of the experimental treatment should also be provided. Daily lesson plans for both the experimental treatment and the control treatment are also included in an appendix. The chapter is titled PROCEDURES.

It is better to over-describe than under-describe the methods you employed, especially in the first draft of a report. Keep in mind that a reader whom you do not know may wish to replicate your study. To do that, the reader will need to follow your procedures carefully and completely.

In reports on completed research, use the past tense to describe methods; in proposals, use the future tense.

#### **Sequence of Topics**

Begin Chapter III with a restatement of your problem statement and your purpose for conducting the research. Research questions or hypotheses are also presented in the beginning section of the chapter. A brief statement about data needed for each dependent variable and how they were collected is also included.

#### **Sample**

Your sample should be identified and the methods used to select the sample should be described. Relate in detail the method used to randomize the sample if such a procedure was used. When samples of convenience are used, you should state that. (An example of a convenience sample would be using one or more classes at your school as the subject group from whom you are collecting data or giving an

experimental treatment.)

The subjects of your study must be described in various ways. First, you will want to identify how many subjects you chose, how many satisfactorily completed the study, and the reasons for attrition of subjects from your study.

In addition, student subjects should be described according to various characteristics so that the reader can visualize them. A variety of characteristics may need to be described for your study, such as grade level, ethnicity, socioeconomic status, gender, special education status, limited English proficiency, reading level, or any of a number of different variables that make sense in the context of your study.

In studies in which an experimental and a control group(s) is being used, it is very important to identify how you controlled for bias. That is, you need to report criteria used to ensure that the two groups were equal on factors that are critical to your variables. These criteria might be Degrees of Reading Power, age, grade level, pretest achievement, or previous in-class experiences.

Descriptions should be provided for teachers, supervisors, assistant principals, or other school officials if you are collecting data from them. Occasionally, researchers will want to collect data from people who work in business and industry. You will want to describe them on the basis of their job titles, number of years of experience in the company, type of company, size of company, and other descriptors that make sense in the context of your study.

Some of the descriptors for your subjects may be collected by you through observation and tallies; if all your subjects are from a particular school, it is often possible to obtain additional information from institutional records. Some of the demographic data may need to be asked on the questionnaire or any other data-gathering instrument you may be using.

## **Instrumentation**

**Unpublished instruments.** If an unpublished data-collecting instrument was used, describe it in detail. Often master's thesis researchers develop their own questionnaire; that is an example of an unpublished data-collecting instrument. The kind of data you are collecting should be identified by sections of the questionnaire or interview schedule. Include a copy of each data collecting instrument in your appendix; be sure to identify each in the methods section as Appendix A or Appendix B, etc.

**Pilot study procedures.** For self-developed data-gathering instruments, describe the procedures you used to pilot study the instrument. Point out any difficulties the pilot group encountered

and how that led to changes in the procedures, the wording of items on the instrument, or the level of language used. The pilot group should be representative of the subjects from whom you are going to collect data.

Another helpful technique is to have your instrument reviewed and critiqued by a panel of experts. Your colleagues in ESC 707 constitute such a panel, and they should be used. If a panel of experts is used, describe in Chapter III who they are and what they did.

**Published instruments.** If a published instrument was used, briefly describe the traits that it was designed to measure, its format, and the possible range of score values. In theses, information on reliability and validity should be summarized.

### **Returns**

In descriptive or survey studies, it is important to identify the number of subjects from whom you attempted to collect data. Also identify the number of usable and complete returns. Usable returns should be reported in relation to the total sent out, not as a percentage of returns. You will also need to identify unusable responses and briefly mention why the returned questionnaire was not usable.

Whenever it is possible to do so, you should compare the characteristics of the respondents with those of the complete sample. Also, when possible, describe how non-respondents are different in any way from the subjects who did respond.

### **Experimental Treatments**

Experimental procedures, equipment, and other mechanical matters should be described in sufficient detail so that the study can be replicated. The common activities engaged in and materials used should be specified for both the experimental group(s) and control group(s). Also, the sequence of tasks for both groups should be identified. Daily lesson plans must be placed in an appendix and referenced in this section of Chapter III.

### **Data Analysis**

The final section of Chapter III deals with procedures used to convert raw data into organized form. Identify tabulation procedures according to frequency distributions, percentage of response, etc. Any statistical procedures which were applied to the organized data (standard deviations, means, medians,  $t$ -tests, chi square, etc.) should also be identified in this section.

## **Action Research Studies**

Action Research is a process in which teachers examine their own educational practice, systematically and carefully, using the techniques of research. The goal of an action research project is to improve some element of your own teaching practice. "Action research is not just hypothesis testing or using data to come to conclusions. It is concerned with changing situations, not just interpreting them." (Henry & Kermis, 1985) An action research question is open-ended: one that is phrased to generate a broad range of insights or understandings, rather than to prove a specific point or to compare experimental or control groups. The results of your study may or may not be generalizable to students and situations other than your own. Typically teacher action researchers try out techniques or approaches designed to address specific problems in their classes, study what goes on as they experiment with the new techniques, and devise new approaches based on their study. Action researchers can collect both quantitative (e.g., grades, numerical survey responses) and qualitative (e.g. observation notes, open-ended interviews) data.

The procedures section describes how you proceeded with your study. It includes a description of your students (your sample) and how you collected your information. The chapter is titled PROCEDURES.

It is better to over-describe than under-describe the methods you employed, especially in the first draft of a report. Keep in mind that a reader whom you do not know may wish to replicate your study. To do that, the reader will need to follow your procedures carefully and completely.

In reports on completed research, use the past tense to describe methods; in proposals, use the future tense.

### **Sequence of Topics**

Begin Chapter III with a restatement of your problem statement and your purpose for conducting the research. Research questions or sub-questions are also presented in the beginning section of the chapter. A brief statement about data needed to answer each sub-question is also included.

### **Subjects**

Typically the subjects of an action research study are your own students, although some action researchers work with other teachers in their schools. Your sample should be identified. Have you selected a particular class or a sub-group of students to focus on? If so, describe why they were selected. Since you are studying your own students or those in your own school, state that your sample is "one

of convenience." (as opposed to one that is randomly selected, or volunteered, or selected in some other way).

Your subjects must be described in various ways. First, you will want to identify how many subjects you chose, how many completed the study, and the reasons for attrition of subjects from your study.

In addition, students should be described according to various characteristics so that the reader can visualize them. A variety of characteristics may need to be described for your study, such as grade level, ethnicity, socioeconomic status, gender, special education status, limited English proficiency, reading level, or any of a number of different variables that make sense in the context of your study.

Descriptions should be provided for teachers, supervisors, assistant principals, or other school officials if you are collecting data from them.

Some of the descriptors for your subjects may be collected by you through observation and tallies; if all your subjects are from a particular school, it is often possible to obtain additional information from institutional records. Some of the demographic data may need to be asked on a questionnaire or any other data-gathering instrument you may be using.

### **Focus of the study**

Describe the unit of study you developed and/or the technique or approach that you implemented in your classroom. Include a daily list of activities during the study period and samples of lesson plans and any other relevant materials in the appendix. Your activities should be described in sufficient detail so that another teacher could undertake them based on the information you provide.

Include a narrative description of any changes that you made to your initial planned activities as you proceeded and the reasons that you made those changes.

### **Data Collection Methods**

Describe the data you collected. What techniques did you use? Common qualitative procedures are: keeping daily journals, conducting focus groups or open-ended interviews with students, analyzing student portfolios or written work, etc. Quantitative procedures include analyzing students' test scores or other achievement data, administering surveys, checklists or inventories, etc. When did you collect what kind of information?

Describe all protocols, rubrics and instruments (surveys, quizzes or tests) that you developed and include samples in your appendix. If

you are working with standardized test information, describe those tests. Also describe any changes that you made in your data collection as you proceeded, and why.

If you piloted your instruments before administering them to the entire group, describe how that led to changes in the procedures, the wording of items on the instrument, or the level of language used. (The pilot group should be representative of the subjects from whom you are going to collect data.)

Another helpful technique is to have your data collection methods and instruments reviewed and critiqued by a panel of experts. Your colleagues in ESC 707 constitute such a panel, and they should be used. If a panel of experts is used, describe in Chapter III who they are and what they did.

### **Data Analysis**

The final section of Chapter III deals with procedures used to convert raw data into organized form. Describe how you worked with your qualitative data. Did you read journal entries or student work to focus on specific themes? To trace changes over time? If you transcribed only parts of recorded interviews, what parts did you transcribe and why? Etc.

Describe how you worked with your quantitative data. Identify tabulation procedures according to frequency distributions, percentage of response, etc. Identify any computer programs you used in your data analysis. Any statistical procedures which were applied to the organized data (standard deviations, means, medians, t-tests, chi square, etc.) should also be identified in this section.

### **Meta-analyses**

Meta-analysis is a statistical approach that summarizes the results of many studies that have investigated basically the same problem; given a number of studies, meta-analysis provides a numerical way of expressing the "average" or "mean" result of the studies. In a meta-analysis, results from previous studies (usually conducted by a variety of researchers who have studied a single topic) are statistically combined in order to arrive at an overall result for all the studies. Typically, in the computation of the mean across studies, researchers "weigh" the studies according to sample size. That is, when computing the mean, they give more weight to the results of studies with more participants than to the results of studies with fewer participants.

## Key Features of Meta-Analysis

- *Effect size* is a numerical way of expressing the strength or magnitude of a reported relationship, be it causal or not. Effect sizes are commonly used in meta-analysis but its use in educational research is becoming more popular. It is a useful statistic for assessing the practical significance of research results (Borg & Gall, 1989).
- A key feature of meta-analysis is that results of studies are translated into an effect size, as a percentage.
- As examples:
  - A) in an experimental study, the effect size expresses how much better (or worse) the experimental group performed as compared to the control group.
  - B) The effect size is also a statistic for quantitatively describing how well the average student who receives an intervention performs relative to the average student who does not receive the intervention.

The formula for effect size is either:

$$E.S. = (X_e - X_c) / SD_c$$

where

$X_e$  = the mean (average) score for the experimental group;  
 $X_c$  = the mean (average) score for the control group;  
 $SD_c$  = the standard deviation (variability) of the scores for the control group

or

$$E.S. = (X_{\text{treatment post}} - X_{\text{treatment pre}}) - (X_{\text{control post}} - X_{\text{control pre}}) / S_{\text{control post}}$$

where X represents the raw score mean, and S is the standard deviation.

The formula may differ, depending on the statistics actually presented in a study, but the objective is the same.

After *effect size* has been calculated for each study, the results are averaged yielding one number that summarizes the overall effect of the studies.

The procedures section of your project report contains a detailed description of the steps taken to identify and select your sample and to collect the data. It includes a description of the population your

study is focusing on, and the criteria you used to select the studies in your analysis.

It is better to over-describe than under-describe the methods you employed, especially in the first draft of a report. Keep in mind that a reader whom you do not know may wish to replicate your study. To do that, the reader will need to follow your procedures carefully and completely.

In reports on completed research, use the past tense to describe methods; in proposals, use the future tense.

### **Sequence of Topics**

Begin Chapter III with a restatement of your problem statement and your purpose for conducting the research. Research questions or hypotheses are also presented in the beginning section of the chapter. Include the following: a brief statement about data needed for each dependent variable and how they were collected, as well as the criteria for choosing studies in the analysis and the population you are focusing on.

### **Description of Studies**

Describe each study in terms of its sample population, focus of the study, instrumentation and procedures, returns, and results. (See pages 28 -30 above for fuller description of these elements.)

### **Meta-analysis**

Describe how you conducted your meta-analysis.

## **SECTION 6b**

### **CONTENT AND SEQUENCE: CHAPTER IV**

Chapter IV contains organized results of your analysis of the data collected. It is titled FINDINGS.

The most important guideline to follow as you develop Chapter IV is to organize the analyzed data into subsets which address specific research questions or hypotheses which you identified in Chapter I. The sequence in which the research questions or hypotheses are listed in Chapter I is the sequence in which you present the subsets of analyzed data in Chapter IV.

Data subsets addressing each research question or hypothesis are explained by narrative text; in addition they are usually presented in tables. Occasionally, the researcher will provide graphs, figures, or diagrams if they help to convey meaning to the reader. Graphs and figures are often used when comparisons, trends, or contrasts are being presented. Polygrams (line graphs), histograms (bar charts), or pie charts are often used to visually depict comparisons, trends, or contrasts.

#### **Sequence of Content**

As required in Chapters II and III, Chapter IV begins with a restatement of the problem under study and identification of the research questions or hypotheses as listed in Chapter I.

Organized data are presented for the research question or hypothesis which is being answered. The research question or hypothesis should be stated so that the reader has a good sense of what is being addressed by the data.

Each subset of data which is presented should be described in narrative text and compared with findings from other studies if they are available. Any seeming inconsistencies or discrepancies in the results should also be explained (Hillestad, 1977).

The chapter ends with a section headed "Summary of the Findings" in which you summarize the analyzed data. Again, follow the sequence of the research questions or hypotheses listed in Chapter I.

## Tone and Style

1) Traditional Research and Meta-analyses. Traditional research is written in a very objective style. The goal in these types of research reports is to "eliminate any bias or subjectivity on the part of the researcher and allow only the data to speak" (Johnson, 2004, p. 149). Therefore, do not interpret or draw conclusions from the results you are presenting in Chapter IV. That is the purpose of Chapter V.

2) Action Research Projects. Action research is written in a more subjective style. "It is recognized that you are part of the research; thus, your thoughts and observations are valued and are recorded along the way. But keep in mind that an action research report is not a letter to the editor. Pronounced biases or hidden agendas are fairly easy to spot and detract from your accuracy and credibility" (Johnson, 2004, p. 149).

## General Writing Considerations

You do not need to show the formula for standard statistical procedures. It is also unnecessary to name a particular computer program used in the analysis (Pyrzczak & Bruce, 1992, p. 68).

Only the statistics based on raw scores are reported unless a very small number of subjects was studied. Raw scores may be presented in an appendix if necessary.

The narrative text describing table data should describe only the main findings identified in the table and point out highlights that the reader may otherwise overlook. Each entry in the table should not be discussed.

Statistical symbols which describe statistical procedures applied to the data should be underlined or italicized. Examples are t-test; df = 10; p <.05.

Numbers that start sentences are spelled out; for example, "Twenty-three percent of the ninth graders . . ." or "Fifty-two students responded negatively to the statement that . . . ."

Numbers under 10 are usually spelled out. Two exceptions to that rule are: (1) Percentages, unless they start a sentence, are always presented in figures with the % symbol. (2) When numbers under 10 and 10 or above appear in the same sentence or the same paragraph, consistently report them in numerals.

The number of subjects from whom data are being reported is handled in this way: (1) If the entire sample population is being reported on, use a capital N to identify the number of subjects. (2)

If you are presenting data from a subset of the sample population, use a lower case n to identify the number of subjects.

### **Creating Tables**

Tables help you to reduce narrative. The table shows the subset of data; the narrative section points out major findings, trends, contrasts, or seemingly inconsistent data in the table. Narrative is also used to make comparisons among groups (i.e., males versus females, cooperative education students versus non-cooperative education students, etc.). It is often helpful to point out degrees of differences (twice as many males responded positively to the statement, for example).

### **Numbering Tables**

Tables are numbered consecutively throughout the entire thesis, beginning with Table 1. Note that Table is capitalized and Arabic figures are used.

### **Table Titles**

Titles of tables are very important. They should be titled in such a manner that one need not read the text to understand what data are presented in the table. The Publication Manual of the American Psychological Association requires that table titles be underlined. If the data from the entire sample are presented in the table, include the number of subjects in parentheses at the end of the title; for example, (N = 157). If data from a subset of the samples are presented in the table, do not include the number of subjects in the title. The number of the subset of subjects will be presented (with a lower case n) elsewhere in the table.

### **Illustration of a Table**

Illustration 4, page 37, shows two tables in proper form (McHugh, 1992, pp. 58, 56). Note that the identification of the table and the title of the table begin flush at the left margin.

One blank line separates elements of the table. Single ruled lines extending from margin to margin separate column headings from the title and the body. A single ruled line also concludes the table.

Table 11 below shows the placement of asterisked (\*) material below the closing line of the table. A note to explain accumulated totals greater than N (respondents could check more than one category) is also presented below the closing line. The word Note is

underscored, followed by a colon and two blank spaces.

**Illustration 4**

Table 10

Student Perceptions Regarding Keyboarding Skill and Computer Background As Factors Affecting Achievement in Course (N = 38)

Level of Importance	Keyboarding Skill		Computer Background	
	n	(%)	n	(%)
Not important	0	(0.0)	1	(2.6)
Important	14	(36.8)	15	(39.5)
Extremely important	24	(63.2)	22	(57.9)
TOTALS	38	(100.0)	38	(100.0)

Table 11

Relationship of Keyboarding Skill and Computer Background to Students' Achievement (N = 38)

Grade	Keyboarding Skill	Computer Background
Computer theory	.60*	.29
Computer production	.55*	.26
Average	.63*	.29

\*Significant at .01 level.

## SECTION 7

### CONTENT AND SEQUENCE: CHAPTER V

Chapter V contains a succinct summary of your findings, your interpretation of what those findings mean or your reflections on your research, and your recommendations for implementation of the findings or for further research in the topic area. It is the most frequently read chapter in theses and dissertations.

The chapter is titled SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS; or SUMMARY, REFLECTIONS, AND RECOMMENDATIONS. The three key words in the title identify the three major sections of the chapter.

#### Content and Sequence

Chapter V begins with a restatement of your problem statement and, if appropriate, a listing of your research questions or hypotheses. That is followed by a concise but understandable description of your population sample and the procedures you used to collect data.

#### Summary

In quantitative or action research studies, summarize, in the same sequence, the findings contained in Chapter IV. Provide a separate summary for the findings related to each research question or hypothesis in the sequence listed in Chapter I.

#### Conclusions and/or Reflections

Discuss what your findings tell you about a solution to your problem statement. Your insights and expert opinion about your findings will help you to discuss them in ways that will be helpful to the reader. Generally, a conclusion is made about the findings for each of the research questions or hypotheses you listed. However, you are not strictly tied to your findings with respect to your specific research questions or hypotheses; in this section it is appropriate to compare or contrast your findings with others you presented in Chapter

II or to identify delimitations or limitations of your study which had an impact on your findings.

Because research findings do not offer incontrovertible proof about the educational problem you investigated, researchers "hedge" their language in concluding statements. For example, it is better to say "Procedure X is likely to produce greater levels of achievement in 10th graders" than to say "Procedure X will produce greater levels of achievement in 10th graders."

You might find it useful to ask yourself several questions as you formulate your conclusions. Here are some suggested questions:

1. What might have been happening within the conduct of the experiment, such as environmental factors, which may account for the findings?
2. What circumstances accounted for unexpected outcomes?
3. Why did the results not turn out as expected or hypothesized?
4. What were the shortcomings of the study? Was it too delimited? Did unexpected limitations impact your findings?

### **Recommendations**

Finally, you recommend in Chapter V. Typically recommendations are made in two categories: (1) How can the findings of this study and related studies be implemented by practitioners in the field and (2) what recommendations do you make for further research in the topic area?

## SECTION 8

### PRE-CHAPTER I MATERIAL

Every project report will contain a title page with an abstract of the study and a table of contents. Many reports will also contain a listing of tables and an acknowledgments page. If figures have been provided within the document, a list of figures is also included.

The sequence of the pre-Chapter I material is as follows:

- Title page (including Abstract)
- Table of contents
- List of tables
- List of figures
- Acknowledgments

The directions for preparing the title page, abstract, table of contents, and list of tables and figures are provided by means of illustrations of properly formatted documents which are shown as Illustration 5, page 42; Illustration 6, page 43; and Illustration 7, page 45.

#### Title Page

The title page identifies your project advisor, the title of your project, your name, the purpose of its preparation, the name of the college, and the month and year in which the project was accepted. (See Illustration 5, page 42.) It also includes an abstract and keywords.

#### Abstract

The Abstract is a brief summary of your study which is placed on the cover page (See Illustration 5). Abstracts should be single-spaced and no more than 125 words in length.

The only heading used is the main heading, ABSTRACT. You should begin with the research purpose, questions, or hypotheses. Highlights of the methodology should be mentioned. Important findings of the study should also be included in the Abstract.

## **Keywords**

Keywords are identifiers that library readers will use to search for research reports about their area of interest. Refer to the keywords that you used in conducting your own searches, and include the three or four that best identify the topic(s) addressed in your report. Keywords may include phrases of two or three words (e.g. "bilingual education").

## **Table of Contents**

The Table of Contents identifies the page number on which the reader will find sections of the report. It is best to prepare the Table of Contents when the document has been accepted in final form because sections of the document may be shifted to different pages in the final editing process. Illustration 6, shown on pages 42, is provided with the permission of Agustin Mejia (1993, pp. i-ii).

## **List of Tables and Figures**

The List of Tables and List of Figures are prepared in the same way; therefore, only a List of Tables is illustrated for you on page 39. The list identifies the number of the table or figure, the title of the table or figure, and the page number on which it appears in the document. Illustration 7, page 44, is provided with the permission of Lynden Cope (1993, p. iii).

## **Acknowledgments**

Some writers wish to acknowledge people or organizations which have been particularly helpful to them in carrying out the study. If you wish to include such material, place it immediately after the List of Tables or List of Figures. Title the page ACKNOWLEDGMENTS. This section may not be longer than one page.

**Illustration 5**

**TITLE**

**NAME OF STUDENT**

**DEPARTMENT OF MIDDLE & HIGH SCHOOL EDUCATION**

**ABSTRACT**

[A short, descriptive summary of your thesis]

**KEYWORDS**

[What terms best describe the material covered in your thesis?]

**Submitted to meet the requirements of ESC 707 in partial fulfillment of the requirements for the  
Degree of Master of Science in Education in  
[EXACT NAME OF YOUR PROGRAM]**

**LEHMAN COLLEGE**

**[MONTH, YEAR]**

[signature of reader]

---

**NAME OF READER [typed]**

Illustration 6

TABLE OF CONTENTS

	Page
LIST OF TABLE . . . . .	iii
ACKNOWLEDGMENTS . . . . .	iv
CHAPTER	
I Introduction . . . . .	1
Background of Study . . . . .	1
Need for the Study . . . . .	2
Purpose and Problem Statement. . . . .	4
Research Questions . . . . .	4
Delimitations . . . . .	4
Definitions . . . . .	5
II Related Literature . . . . .	8
A Federal Rationale for the Problem . . . . .	8
The Dropout Problem . . . . .	14
Federal Standards and the Job Training Partnership Act . . . . .	15
Public Laws Initiated Prior to the Job Training Partnership Act . . . . .	17
Job Corps . . . . .	18
Job Corps' Vocational/Academic Training . . . . .	19
Evaluation of Job Training Programs . . . . .	20
The Carl D. Perkins Vocational Education Act and the South Bronx Job Corps . . . . .	23
Factors that Contribute to Employment Problems of Inner City Disadvantaged Youth . . . . .	24
Summary of Literature . . . . .	27
III Procedures . . . . .	30
Population and Sample . . . . .	30
Trade Teachers Interviewed . . . . .	32
Descriptive Demographic Data . . . . .	33
Data Gathering Instruments . . . . .	34
Procedures for Analyzing the Data . . . . .	35
IV Findings . . . . .	36
Vocational Training . . . . .	37
General Equivalency Diploma . . . . .	41
Placement of Students . . . . .	42
Summary of Findings . . . . .	44

V	Summary, Conclusions, and Recommendations . . . . .	46
	Summary . . . . .	46
	Conclusions . . . . .	47
	Recommendations . . . . .	49
	SELECTED REFERENCES . . . . .	51
	APPENDICES . . . . .	54
A	Graduate Questionnaire . . . . .	56
B	Cover Letter to Graduates . . . . .	58
C	Introductory Letter from South Bronx Job Corps to Graduates. . . . .	60
D	Follow-up Letter to Graduates . . . . .	62
E	Financial Guidelines . . . . .	64

Illustration 7

LIST OF TABLES

TABLE	Page
1 Enrolled Students' Demographic Data . . . . .	28
2 Summary of Enrolled Students by Age . . . . .	29
3 Summary of Students' Profiles at Enrollment . . . . .	30
4 Summary of Respondents Reported Enrolled in College . . . . .	33
5 Programs Studied at the Educational Opportunity Center Westchester . . . . .	34
6 The Success of Graduates in Obtaining Related Entry-Level Employment . . . . .	35
7 Comparative Summary of Job Placement for Graduates of Vocational Programs . . . . .	36
8 The Accumulated Job Change of 1991 and 1992 Graduates . . . . .	37
9 Summary of Comparative Job Change for 1991 and 1992 . . . . .	38
10 Employment Waiting Period for Graduates of EOC-W . . . . .	39
11 The Retention of Placement Jobs of EOC-W Graduates by Gender . . . . .	40
12 The Helpfulness of EOC-W Job Search Assistance . . . . .	41
13 Summary of Students' Enrollment, Completion, Continuing, and Attrition . . . . .	42

## SECTION 9

### POST-CHAPTER V MATERIAL

Two kinds of material follow Chapter V: The listing of selected references and appendices.

#### Listing of Selected References

Section 5, pages 19 - 24, of this *Guide* describes how individual listings of reference citations should be prepared and how the selected references listing should be formatted.

#### Appendixes

Appendixes provide examples of documents which were used to carry out the study. These may include samples of student work, lesson plans, pre- and posttest instruments, surveys or questionnaires, cover letters, rubrics, or any other document that was used in the study. Each document is shown in a separate appendix and is labeled with a letter, beginning with A. For example, the questionnaire used to collect data might be labeled Appendix A; the cover letter sent with the questionnaire, Appendix B; the follow-up letter to non-respondents, Appendix C; etc. In the unusual case of a researcher who has more than 26 appendixes, continue labeling with Appendix AA, etc.

Most researchers will have more than one appendix. In that case, insert a numbered page with the title "Appendix" centered both vertically and horizontally; then insert a numbered page with the title "Appendix A" centered both vertically and horizontally; then place the document with a page number typed in the upper right-hand corner; continue with a numbered page with the title "Appendix B"; etc.

Researchers who have only one appendix begin that section with a numbered sheet of paper with the title "Appendix A" centered vertically and horizontally; then place the document with a page number typed in the upper right-hand corner.

## SECTION 10

### THE EDITING PROCESS

Preparing this report is unlike most writing tasks you have undertaken in your academic career. Writers typically prepare a draft of each chapter which is submitted to faculty who comprise a project committee. They read the material and make comments and corrections to be incorporated into yet another draft. It is not uncommon for each chapter to undergo from three to five drafts before the language, organization, and format are set in place.

Most proofreaders and editors use a type of shorthand symbol to identify changes they require in the text of a document. They do so because the symbols save them considerable time in the editing process. However, you need to understand what the symbols mean and what the correction is that you need to make.

Conventional proofreaders' marks are used to communicate changes or corrections to be made. Illustration 8, shown on page 47, provides you with the information you need to interpret proofreaders' marks: The left-hand column identifies the change to be made; the middle column shows what the proofreaders' mark looks like; and the right-hand column provides an example of text with the proofreaders' mark.

Illustration 8

<u>Change</u>	<u>Proofreaders' Mark</u>	<u>Example</u>
Insert	^	You must <sup>go</sup> to the class.
Delete	e	They went to <del>to</del> class.
Transpose	∩	It is <u>largely due</u> to
Lower-case letter(s)	lc or /	He was studying / history. or He was studying HISTORY.
Capitalize	≡	Mary studied <u>english</u> .
Omit space	)	John re <del> </del> ported briefly.
Add space	#	She wrote Chapter #1.
Move to left	┌	┌ I am unhappy.
Move to right	┐	┐ I know how to edit copy.
Single spacing	SS	SS { Top management wanted to learn how to edit.
Double spacing	DS	DS { Communications is very important in business.
Triple spacing	TS	INTRODUCTION ↓ TS
New paragraph	¶	¶ Proofreaders' marks facilitate revisions.
Move as shown	↪	Some executives did not know how to <u>correctly</u> communicate commands.
Ignore the correction	STET	STET Some <del>electric</del> type- writers were outdated.
Spell out Underscore	sp. <u>          </u>	sp. N.Y. <u>The Reference Manual</u>

## SECTION 11

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