WHAT BELONGS IN MY RESEARCH PAPER?

by

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In Partial Fulfillment of the Graduation Requirements

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TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISCLAIMER</td>
<td>ii</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>iii</td>
</tr>
<tr>
<td>[NOTE: WHILE NOT USED IN THIS TEMPLATE, ANY LIST OF FIGURES OR LIST OF</td>
<td></td>
</tr>
<tr>
<td>TABLES WOULD BE INSERTED HERE WITH APPROPRIATE PAGE NUMBER(S.)]</td>
<td></td>
</tr>
<tr>
<td>PREFACE</td>
<td>iv</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>Error! Bookmark not defined.</td>
</tr>
</tbody>
</table>

Introduction to Organizing the Paper.................................................................1
    Deciding on Chapters or Section Headings.....................................................1
What belongs in the Introduction? .......................................................................2
What belongs in the Body? ....................................................................................3
What belongs in the Conclusion? .........................................................................4
    Conclusions ..................................................................................................4
    Recommendations ..........................................................................................4
Conclusion ...........................................................................................................5
SAMPLE APPENDIX ...............................................................................................6
BIBLIOGRAPHY .......................................................................................................7
The preface is an OPTIONAL informal statement from the author to the reader about the research project and the paper. Usually the preface describes the general issue addressed in the paper and the reasons for choosing to research the topic. You may also include a general statement about the value of the research or the special applications to which it pertains. The preface, however, is not an abstract of the paper.

The preface is the place to acknowledge the assistance you received. Guidance and assistance from your research advisor and other faculty are usually acknowledged. Substantial help from librarians, sponsoring organizations, or members of outside organizations may also be acknowledged. If acknowledgments are the only material provided in the preface, this section can be labeled “Acknowledgments” rather than “Preface.” Because the preface is an informal statement from the author to the reader, it is usually written in the first person, and the reader may be addressed in the second person. However, throughout the rest of the paper, third-person should be used.

[SPECIAL NOTE ON PAGE SET-UP/ADMINISTRATIVE REQUIREMENTS FOR RESEARCH PAPER: 1-inch margins all sides; Times New Roman 12-point font for all text (excluding title and other special headings); body of paper double-spaced (except for block quotations); page numbers centered at bottom of page (use Roman numerals for front matter as shown here although title page shows no number; Arabic numerals for the body of the paper itself); for citing sources use numbered endnote style as described in AU Style Guide, section 5.1; single-space Bibliography entries but double-space between entries as shown on this template.]
ABSTRACT

All Air University research papers must contain an abstract. The length of the abstract should be roughly 200 words. The abstract is the last item included in the prefatory material. It summarizes and highlights the information contained in the paper. The main items described in the abstract include the problem statement, the methodology followed in conducting the research, the key findings, and the conclusions. Obviously, it is impossible to say very much about all of the aspects of the paper in 200 words. But the reader should at least discover the key thesis, content and the methods used in the paper by reading the abstract. The abstract is not a preface; it is a succinct statement of the important aspects of the research. Students should be aware that abstracts are usually republished in other reference volumes or electronic databases (such as the Air University Research Information Management System/AURIMS database). Abstracts help keep other researchers informed about developments in the field and provide a means of identifying research products that they may want to obtain and read.
Introduction to Organizing the Paper

Organization is a key factor in successful presentation of the research paper. While you, the researcher, have some latitude in paper organization—and your advisor may provide additional guidance—major sections of the paper should contain elements that are appropriate to that section. The purpose of this discussion is to address format issues and identify the required elements of each chapter or major section of the ACSC research paper.

Deciding on Chapters or Section Headings

Individuals may choose to use a chapter format or some other major heading area format. The chapter format arranges the paper into separate sections with chapter headings, and is most appropriate for very long papers. Instead of using chapters, students may choose to organize their papers into a single flowing document that uses major heading/section areas. All papers, whether presented in chapter format or divided into major heading areas, must conform at a minimum to the standard three-part organization of any formal writing: papers must have an introduction, a body, and a conclusion.

The sample you are reading right now uses the major heading format and you can use this type of organization as a template. Other resources are past examples of ACSC student research papers available via AURIMS or in the Fairchild/AU Library database. The final arbiter for formatting your research paper is AU-1, Air University Style and Author Guide, along with any guidance from your advisor. Just realize that no matter how you sectionalize your paper—by chapters or by major heading areas—the key to successful research reporting is good organization suitable to your topic. Always start with the standard three-part mindset: introduction, body, and conclusion.
What belongs in the Introduction?

Information requirements for papers with major heading areas are the same as those for papers with separate chapters. The first chapter, or the first major heading area, is the introduction to the paper. You may even use “Introduction” as the, or as part of, the title of Chapter 1 or the first major heading area. Regardless of whether you use chapters or major heading areas, the first section is always the introduction.

The introduction will briefly overview the paper and is normally no more than two-three pages in length (this depends in part upon the length of your overall paper). It is appropriate to address the following key elements in the introduction:

1. Pose the research question. For example, “Why are females less likely than males to choose engineering as a career?”

2. Clearly state the research problem. For instance, one might discuss the facts surrounding the imbalance of female and male engineers and known problematic ramifications.

3. Provide a purpose statement within a clear, concise research argument.

4. Briefly address the research methodology/framework. For instance, the author may use a qualitative research methodology and describe how the methods he or she used included interviews, a content analysis, and/or other methods, to collect data.

In addition to briefly addressing the research question, research argument, problem background/significance, and methodology/framework, communicate your main thesis statement. You can do this as a sentence that stands alone, or use it to set the stage for your research question, or as a logical follow-on to your research question. Finally, use the introduction to spark the reader’s interest, to set the stage and to provide an overview of the chapters/major heading areas that will follow in the body of your paper.
What belongs in the Body?

After the introduction (Chapter 1 or the first major heading area), the middle chapters, or heading areas, form the body of the paper. This should essentially conform to the outline you created in RE-1 as part of your Research Proposal, although it is acceptable—actually, it is expected—that you will modify that outline as you progress further into the research process and your critical analysis develops.

In general, the body of your paper should provide sufficient background to provide a foundation for your issue analysis. The bulk of the body should focus on a well-developed and supported issue analysis. The body (background and issue analysis) is the meat of your research paper and may easily require more than 20 pages to complete (in fact, it is not at all unusual for ACSC research papers to comprise 30-50 pages). Make sure that you do a complete job of citing your sources using an appropriate style throughout your paper. You must use the *AU Style Guide* which is based on the *Chicago Style Manual*, and be consistent.¹ (This endnote is an example from the *AU Style Guide*. Depending upon your word processing program such as Microsoft Office Word 2007 used here, you would select “References,” and then select “Endnote” to insert your reference. As you are probably already aware, Word will take care of the numbering for you and double-clicking on the number will take you back and forth between the text and the endnote itself.)

Each paper is different; therefore, you are not limited to dividing the body of your paper into only three middle chapters or three major heading/section areas. Whether your paper ends up with four, five, six, or more total chapters or sections, just remember that your minimum page limit for the body of your text is 25 pages (not counting the front matter and end matter).
What belongs in the Conclusion?

While the conclusion section of your paper (final chapter or major heading area) is the appropriate place for a summary of your paper, a summary is not the only purpose of the conclusion. Within the conclusion section, and prior to the summary paragraph(s), you should provide a brief discussion. This discussion should provide at least two sub-headings: conclusions and recommendations, but you may choose to use different terminology.

Conclusions

This section describes the conclusions that you drew from your paper. For example, if your research question was, “Why are females less likely than males to choose engineering as a career?” and the body of your paper analyzed the appropriate issues, you may have drawn the conclusion that females are typically not made aware of the opportunities available in the engineering field. (Normally you will probably have a number of conclusions in your paper.)

Recommendations

Use this section to set forth your ideas on how to fix issues or problems you have identified. For example, if you concluded that females are typically not made aware of the opportunities available in the engineering field, then you might explain how (i.e., recommend) an information campaign aimed at female high school students could serve to enlighten college-bound females about those opportunities. When proposing recommendations, it is obviously important to link those items to the analysis that you have already developed in your paper. Furthermore, you would normally want to provide recommendations that are attainable, whether in the short-term or long-term. Too many researchers do not allow themselves adequate time to reflect sufficiently on this area, yet it is often the single most important “take-away” for your readers.
Conclusion

The research you perform is a significant undertaking and as such it provides you with an opportunity to make a significant impact on the area or program that was the object of your research. One key step in making a significant impact is to provide a coherent and well-organized report of your research. As you organize your paper, remember you may choose to use a chapter format or a major heading area format and you should use an introduction-body-conclusion approach to the paper. The introduction should address the research question, the argument, problem background/significance, methodology/framework, and communicate the thesis of your research. It should also spark the reader’s interest and set the stage for, and preview, the material that follows. The body of your paper should provide sufficient background to support your clearly developed issue analysis. Finally, the conclusion section of your paper (final chapter or major heading area) allows you to describe your conclusions, make useful recommendations, and tie the paper together with a concise summary. Just as “All roads lead to Rome,” there are many approaches you may take to arrive at a successful research paper—but the key to all successful approaches is organization!

Notes


[ADMINISTRATIVE NOTE: ACSC Research Papers must be formatted in accordance with AU-1, the Air University Style and Author Guide, which requires endnotes for citations. See Section 5.1 of the AU Style and Author Guide for extensive information and examples. Always ask your advisor/instructor if you have questions.]
Appendix A

Sample Appendix

This section is provided to illustrate how to include an appendix in the paper and it illustrates how the title is included in this template’s Table of Contents. As explained in The Chicago Manual of Style,

Some kinds of material properly relegated to an appendix are explanations and elaborations that are not essential parts of the text but are helpful to a reader seeking further clarification; texts of documents, laws, and so forth, illustrating the text; and long lists, survey questionnaires, or sometimes even charts or tables. The appendix should not be a repository for raw data that the author was unable to work into the text.1

As noted by the preceding reference, endnotes for an appendix go at the end of that appendix. To do this, make sure that you are keeping section breaks (continuous) between different sections of your paper. If you have problems with this, please ask your advisor.

Notes

BIBLIOGRAPHY


[ADMINISTRATIVE NOTE: Bibliographic entries are single spaced within each entry, with the second/third/etc. line being indented; and double spaced between entries. Bibliographies are arranged alphabetically. See AU-1, Air University Style and Author Guide, Section 5.2, for more on bibliographies.]