Format Advisor
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MSSE WRITING STYLE WORKBOOK

The writing MSSE graduate students are required to complete must meet graduate level standards. The ability to communicate thoughts and results effectively in writing is an essential skill of all master level graduates. This document has been prepared by the MSSE Program office to specifically address issues of formatting and is designed to illustrate professional writing in graduate courses and the MSSE Capstone Paper. The general academic writing style is unique to MSSE because a combination of MSU Graduate School guidelines and APA guidelines are utilized. This document is always your FIRST reference for formatting guidelines. Keep it handy as you write.

Included in this workbook are formatting requirements and writing expectations for MSSE graduate students. Many of the guidelines pertain directly to the MSSE Capstone Paper; however, these recommendations and standards are expected in all graduate level writing. A MSSE Format Advisor is available to help with the formatting of papers required for MSSE core education courses. Please do not hesitate to contact the MSSE Format Advisor for any questions and/or concerns. The contact information for the Format Advisor is:

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Writing style, language, grammar, and format must be appropriate for a scientific English paper. Specific style and formatting rules that all MSSE students should use are provided in the guidelines, and an example of a capstone demonstrating these guidelines are included in this workbook. These standards are a combination of APA, MSU Graduate School, and MSSE guidelines and are unique to MSSE. Specific language and grammar references include:

- Classic writing guide – *The Elements of Style* by Strunk and White, 2009
- *Scientific English* by Robert Day – a guide specific for scientists and other professionals
- Online resource: Online Writing Lab at Purdue (http://owl.english.purdue.edu/owl)

Professional papers are reviewed and edited to ensure clarity of writing. The faculty is more interested in careful, thoughtful, concise writing and organization than in length. No page limits are provided with these criteria. You may also want to have a peer
(classmate, colleague, family member, or friend) read your paper and edit for grammar, organization, and clarity.

Allow sufficient time to circulate drafts, incorporate suggestions, and polish the final paper. Avoid the end of the semester crunch as much as possible! Expect that faculty members might be “unavailable” during parts of the semester because of field research or conference attendance.

**General Writing Guidelines**

**Action Research Reference**

When writing about your action research project, refer to it as a classroom research project. The project is based on the action research model or an action research-based classroom project.

**Introduction/Background Section**

If required, the introduction/background section of the paper should contain demographic information about the subjects of your study. Be sure to include a citation from a school website, a site such as city-data.com or personal communication from an administrator for data used in the section.

**Conceptual Framework** (i.e. literature review)

The conceptual framework (i.e. literature review) should be based on modern and innovative approaches and ideas. It should be well documented with existing literature, including a review of current thinking relative to this topic, a synthesis of science and education information related to the project.

**Discussion**

On-line discussion and mail message writing are considered non-graded for writing, so any style is acceptable. However, you should remember that you are making an impression through not only what you say, but how you write.
References

In general, a reference should contain the author name, date of publication, title of the work and publication data. Examples of types of references formatted correctly are illustrated in the REFERENCES CITED section of the Capstone Paper included in this workbook. Note that a reference list cites works that specifically support a particular article. In contrast, a bibliography cites works for background or for further reading and may include descriptive notes.

In Text Citations

In general, references are cited in text with an author-date citation system and are listed alphabetically in the reference list. Examples of types of citations formatted correctly are illustrated in Appendix A of the Capstone Paper included in this workbook. The citation is noted at the end of the paragraph if an entire paragraph is one citation.

Appendices

Use appendices when including material that is important to the writing, but should not be included in the narrative. Appendix items are titled, lettered and referenced in the text, usually at the end of sentences. Examples of appendices are included in this document.

Analysis Writing

When writing the analysis section, begin by stating the instrument and the results. Remind the reader of the sample size (N) by including it at the end of one of the sentences in the first paragraph. There is no need to state the sample size again in the body of the paper. Here's an example:

The results of the Inquiry Survey indicated that 75% of the students reported that they agreed or strongly agreed that inquiry instruction made them think more deeply (N=29). One student said, "I really struggled with the inquiry approach early on because I was used to just reading the answer and giving it back. This made me think and in the long run helped me understand better." Another stated, "I loved the inquiry stuff. It really made me think."

Note that italics were used to set off the descriptors from the survey. The first sentence contained the name of the instrument, the data results percentage, not raw numbers, and
the sample size. The statement was supported through the student quotes. N is always in italics.

Naming Collection Instruments

If you create your own data collection instruments, you must name them, refer to them by that name in the narrative, and put a copy of the instrument in the appendix. For example:

The Handheld Confidence Survey was administered to students the day after they received their handhelds to take home (Appendix A).

According to the Handheld Confidence Survey, 78% of the students were able to effectively and efficiently open the E-reader program and read the assigned text.

Abbreviations

The use of abbreviations for schools such as Bozeman High School (BHS), data collection instruments such as Classroom Assessment Technique (CAT) and others are appropriate under these conditions: that the abbreviation is used after the full inclusion of the title in close proximity to the first occurrence and is used often in the paper. Only use abbreviations that will be used often throughout the paper. Don't include them if they are only used once or twice.

Quotations

Direct quotations of less than 40 words are included in the text and enclosed in double quotation marks. The punctuation is included in the quotation marks. An example follows. One student reported that, "The use of handhelds for reading is awesome. I don't have to take a huge book home every night."

Direct quotations of 40 words or more must be single-spaced and blocked. Both sides are indented and the text within the quote is justified. Quotations in the narrative need a citation, including the page number.

Graves (2009) stated that "all quotations need proper punctuation" (p. 123). Note that you include the author, the date, and the end of the quoted section has the end quotation mark/space/parenthesis/p./space/number/parenthesis/period. Quotation marks are not used to enclose the block quotation.
Capitalization

The titles of school subjects are capitalized only if they are a language or include a number or letter after them.

Acceptable: I teach French, Earth Science II and Algebra A.
Not acceptable: I teach Chemistry.

Punctuation

Sentences or phrases that end with a quotation mark, the punctuation is comma/question mark/period/quote.

All students reported that they "greatly enjoyed the activity" or when asked, "What is your favorite subject?", nearly all students mentioned science.

Avoid the overuse of semicolons. Use a semicolon to separate two independent clauses that are not joined by a conjunction and to separate elements in a series that already contain commas. Check the use of commas. Commas are used to separate items in a list and to separate two independent clauses.

Acceptable: My students do labs, seatwork, and in-class readings (items in a list).
Acceptable: My students enjoy labs in which they are able to work in pairs, and they also enjoy those few times when they work alone on performance-based assessment skills (two independent clauses).

Numbers

Numbers in sentences must be spelled out if they are the number ten or under or if they begin a sentence. If a number larger than nine is used in a sentence, then you should use all numerals in the sentence. Never begin a sentence with a number that is a percentage.

Acceptable: Eight of my 10 students are female.
Acceptable: Of the 14 students in my class, 6 are males.
Acceptable: Forty percent of the students are male.
Not acceptable: Of the 9 students, three are females.
Not acceptable: I had 3 students miss the lab.
Not acceptable: 3 students are missing teeth.
Not acceptable: 30% of the students have red hair.

Page Numbers

Page numbers may or may not be required for MSSE graduate writing, but are required in the MSSE Capstone Paper. If you choose to use page numbering in other graduate papers, the same formatting rules apply: numbers should be located at the top of the page, one inch margin, and centered. Use the page numbering examples included in the Capstone paper as a guide.

Pronouns

The use of first person (I, me, we) is acceptable. When writing about research that YOU conduct in your classroom, you may use 1st person. Traditionally, the Conceptual Framework (literature review) section is written in 3rd person since you are presenting a review of literature.

Font and Sizing

Use Times New Roman, size 12 font throughout the paper, including titles of tables and figure captions. The contents of a table may use a smaller font size to allow a large table to fit on a page; however, the text must be clearly readable. The contents of a figure may contain text in any typeface, as part of the original figure; however, the text must also be clearly readable. Tables and figures should be no larger than one page.

Paragraph Alignment

Use only left justification for paragraphs, tables, and figures. Do NOT use right justification or the combined left and right justification option.

Indenting

The first line for all paragraphing must be indented one tab. Block quotes and bulleted lists may be indented one tab.

Running Head

Do NOT include a running head on your papers.
Section Headings

Use the section headings and heading level examples in the MSSE CAPSTONE PAPER Outline as a guide. Only use subheadings if they make sense. In most cases, the topic sentence of paragraphs is enough to make a clear transition from one topic to another.

Bolding

There is NO bolding in APA.

Show/Hide “¶”

To help find hidden formatting symbols or characters in the document, look at the ribbon or TOOLBAR at the top of the Microsoft Word window and make sure that the HOME tab is selected. Under the PARAGRAPH tab grouping, click the button with the paragraph sign on it. When selected, formatting marks and paragraph symbols appear throughout your document.

MSSE CAPSTONE PAPER CRITERIA

Each Master of Science in Science Education (MSSE) student, with the cooperation of the student’s graduate committee, will identify and complete a capstone project. The results of each student's capstone project must be summarized in a written, professional paper approved by the student's graduate committee and submitted as a Word document to the MSSE office. Oral project presentations will be made at the Professional Symposium in Science Education scheduled in July of each year.

The Capstone Professional Paper must have the following sections: Introduction and Background, Conceptual Framework, Data and Analysis, Interpretation and Conclusion, and Value.

INTRODUCTION AND BACKGROUND

A concise statement of the project focus question. A rationale for why the question is a current topic, researchable and relevant to science education. Background information about your experience, project setting and what led you to this topic.
CONCEPTUAL FRAMEWORK (i.e. literature review)

The Capstone Project should be based on modern and innovative approaches and ideas. It should be well documented with existing literature, including a review of current thinking relative to this topic, a synthesis of science and education information related to the project. Include the framework of concepts, principles and theories underlying and informing the project.

DATA AND ANALYSIS

Science and education data should be able to stand tests of validity and reliability. Data display (i.e. tables and figures) and analysis should be appropriate to the question and setting of the study. Effort should be made to triangulate and synthesize together data from various instruments.

INTERPRETATION AND CONCLUSION

Your interpretation of the project results should lead to clarification or resolution of the focus question. The project's claims should meet criteria for validity.

VALUE

A summary of how the project expands, clarifies, validates, or invalidates the principles and/or process of science education. The results should generate new questions. The project should have implications for teaching-learning beyond your individual classroom or situation.

SPECIFIC LANGUAGE AND GRAMMAR QUESTIONS REFERENCES

Specific style and formatting rules that all MSSE students should use are provided in the guidelines, and an example of a capstone paper demonstrating these guidelines is included in this workbook. These standards are a combination of APA, MSU Graduate School, and MSSE guidelines and are unique to MSSE.

- A classic writing guide is *The Elements of Style* by Strunk and White, 2009.
- *Scientific English* by Robert Day is a guide specific for scientists and other professionals.
- Online resource: Online Writing Lab at Purdue (http://owl.english.purdue.edu/owl)
The capstone professional paper is reviewed and edited to ensure clarity of writing. Graduate Committees are more interested in careful, thoughtful, concise writing and organization than in length. No page limits are provided with these criteria.

Have committee members read and comment on early drafts. They expect to assist you with paper revisions. One faculty member has mentioned that he expects a paper to go through about seven drafts prior to the final accepted version. You may also want to have a peer (classmate, colleague, family member, or friend) read your paper and edit for grammar, organization, and clarity.

Allow sufficient time to circulate drafts, incorporate suggestions, and polish the final paper. The MSU spring semester ends the first week of May, so avoid the end of the semester crunch as much as possible! Expect that committee members might be “unavailable” during parts of May and June. Many faculty advisors are doing field research, attending conferences, and preparing for the summer session in May and June.

**NOTE:** when you wrote assignments for EDCI 509 you used present or future tense. Traditionally, the Conceptual Framework is written 3rd person. Therefore, if you put your paper together as sections of separate assignments for EDCI 509, there may be statements, paragraphs, or concepts that appear repeatedly. Please be sure to edit for re-statement, repeat, tense, and redundancy. Your advisors will appreciate your efforts to be concise.

**SPECIFIC CAPSTONE WRITING GUIDELINES**

The following guidelines are specific to the MSSE Capstone Research Paper:

1. Start with clean, blank Word document. Go to PAGE LAYOUT tab. Select **Margins** and set margins to 1 inch for top margin, bottom margin, right margin and 1.5 inches left margin. Set font to Times New Roman 12 pt. Go to the “Paragraph” section and set the “Indent Left and Right” to 0 inches and the “Before and After Spacing” to 0 pt. **Do not insert page numbers yet.**
2. Complete the first draft of the basic components or body of the capstone paper. The basic components are the Introduction and Background, Conceptual Framework, Methodology, Data and Analysis, Interpretation and Conclusion, References Cited, and Appendices. The body of the capstone is continuous; therefore, do not start each basic component on a new page unless the previous
component ends at the bottom of the page. A correctly formatted capstone paper with detailed instructions is included in this workbook.

3. After the body of the capstone is drafted, begin working on the Front Matter of the capstone paper including the Title Page, Statement of Permission to Use, Dedication (*Optional), Acknowledgement (*Optional), Table of Contents, List of Tables, List of Figures, and Abstract. Manuscript Information Page is added ONLY if the capstone is being submitted to a peer-reviewed journal. Please see Appendix C for the requirements for the additional page that is added to the FRONT MATTER.

Now that the first draft of the capstone is complete, page numbers are added. The instructions for adding page numbers to the capstone paper are:

1. Open the Capstone Draft document.
2. Select and highlight only the Front Matter.
3. Click on INSERT tab. Click on Page Number ▼. Choose top of page “plain number 2” (centered). Choose Page Number again and scroll down to Format Page Number. Choose i, ii, iii … .and the select “OK”. Then select Header ▼, the Edit Header, and choose Different 1st page. Close Header and Footer tab.
4. Select and highlight the basic components of the capstone (Introduction and Background through Appendices). Be sure a “New Section Page Break” is inserted at the bottom of the last page of the FRONT MATTER (ABSTRACT). Under the PAGE LAYOUT tab, in the Page Setup group, click the Breaks ▼ and then choose Next Page Section Break.
5. Click on INSERT tab. Click on Page Number ▼. Choose top of page “plain number 2” (centered). Choose Page Number again and scroll down to Format Page Number. Choose 1, 2, 3 … . After “1, 2, 3 … is chosen, under Page Number, click Start, set at “1” and then select “OK”. Close Header and Footer tab.

**Important Reminder**

Remember to check page numbers every time edits are made. Recheck the page numbers on FINAL Capstone before submission to the MSSE Office!!
A MSSE Capstone Paper Model with formatting instructions and guidelines is included in the next section. A MSSE Format Advisor is available to help with the formatting of the MSSE Capstone and other papers required for MSSE core education courses. Please do not hesitate to contact the MSSE Format Advisor for any questions and/or concerns. The contact information for the Advisor is:

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MSSE CAPSTONE PAPER MODEL WITH FORMATTING

INSTRUCTIONS AND GUIDELINES
BEGIN TITLE HERE IF IT REQUIRES THREE LINES

TITLE OF CAPSTONE PAPER IN

ALL CAPITAL LETTERS

by

Name

A professional paper submitted in partial fulfillment of the requirements for the degree of

Master of Science

in

Science Education

MONTANA STATE UNIVERSITY

Bozeman, Montana

Month Year
©COPYRIGHT

by

Your Full Name

Year

All Rights Reserved
DEDICATION, ACKNOWLEDGEMENT - *OPTIONAL*

Dedication may be no longer than one page, single spaced, and should precede the acknowledgments page.

Acknowledgement is double spaced and limited to one page.

Paragraphs are left aligned and first line indented.
TABLE OF CONTENTS

1. INTRODUCTION AND BACKGROUND .............................................................1

2. CONCEPTUAL FRAMEWORK ...........................................................................2

3. METHODOLOGY ...............................................................................................3

4. DATA AND ANALYSIS ......................................................................................4

5. INTERPRETATION AND CONCLUSION ..........................................................10

6. VALUE ...............................................................................................................11

REFERENCES CITED ............................................................................................12

APPENDICES .........................................................................................................15

APPENDIX A Citations in Text Formatting Guidelines..........................................16
APPENDIX B Required Journal Paper Additional Front Matter ......................19

If the Table of Contents continues to more than one page, the following pages must be titled:

TABLE OF CONTENTS - CONTINUED

Instructions for Page Number Alignment:

1. Do not add page numbers to TABLE OF CONTENTS until first draft is completed.
2. After first draft is completed and page numbers are determined, insert the page number directly after the last letter of each section title with no spacing.
3. Highlight text/numbers from INTRODUCTION through the last Appendix line.
4. On HOME tab, go to Paragraph section and click on the lower right arrow to open the dialogue box.
5. In the lower left corner, click on TABS.
6. In the TAB section, click on the Clear All button.
7. Go to the top and enter “6.0” in the Tab Stop Position.
8. In the Alignment section, click Right.
9. In the Leader section, choose 2 ….
10. Click on Set button, then on the OK button.
11. Insert marker between last letter of each section title and page number, then hit the Tab key. Do this for each page number.

IMPORTANT: Remember to RECHECK Page Numbers on FINAL Capstone!!
1. Data Triangulation Matrix ........................................................................................................4

2. Teacher Response for Field Notes Question ...........................................................................5

3. Demographics for Review of Method and Longitudinal Study Subgroups ............................5

If the List of Tables continues to more than one page, the additional page(s) must be titled:

LIST OF TABLES - CONTINUED

Instructions for Page Number Alignment:

1. Do not add page numbers to List of Tables until first draft is completed.
2. After first draft is completed and page numbers are determined, insert the page number directly after the last letter of each section title with no spacing.
3. Highlight text/numbers from the first table title through the last table title.
4. On HOME tab, go to Paragraph section and click on the lower right arrow to open the dialogue box.
5. In the lower left corner, click on TABS.
6. In the TAB section, click on the Clear All button.
7. Go to the top and enter “6.0” in the Tab Stop Position.
8. In the Alignment section, click Right.
9. In the Leader section, choose 2 ….
10. Click on Set button, then on the OK button.
11. Insert marker between last letter of each section title and page number, then hit the Tab key. Do this for each page number.

IMPORTANT: Remember to RECHECK Page Numbers on FINAL Capstone!!
LIST OF FIGURES

1. Lee Self-confidence Pre-test Survey.................................................................6

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5. Relationship Between the Summative Test Scores and the ISN Score .................9

If the List of Figures continues to more than one page, the additional page(s) must be titled:

LIST OF FIGURES - CONTINUED

Instructions for Page Number Alignment:

1. Do not add page numbers to LIST OF FIGURES until first draft is completed.
2. After first draft is completed and page numbers are determined, insert the page number directly after the last letter of each section title with no spacing.
3. Highlight text/numbers from the first figure title through the last figure title.
4. On HOME tab, go to Paragraph section and click on the lower right arrow to open the dialogue box.
5. In the lower left corner, click on TABS.
6. In the TAB section, click on the Clear All button.
7. Go to the top and enter “6.0” in the Tab Stop Position.
8. In the Alignment section, click Right.
9. In the Leader section, choose 2 ....
10. Click on Set button, then on the OK button.
11. Insert marker between last letter of each section title and page number, then hit the Tab key. Do this for each page number.

IMPORTANT: Remember to RECHECK Page Numbers on FINAL Capstone!!
The abstract must contain the following elements: statement of the problem, procedure or methods, results and conclusions. Mathematical formulas, abbreviations, diagrams, and other illustrative materials should not be included. It should be written to be understood by a person who does not have expertise in the field of study.
INTRODUCTION AND BACKGROUND

The Introduction is the rational for why the capstone question or focus is a current topic, researchable and relevant to science education. Background information about the capstone experience, project setting and what led to this topic should be included.

First Level Heading

The first letter of each word in the first level heading is capitalized except articles, conjunctions, and prepositions.

Second Level Heading

The first letter of each word in the second level heading is capitalized except articles, conjunctions, and prepositions. If Heading is too long, wrap to the next line, single-spaced.

Third Level Heading

Begin text on the same line. More than three levels of subheadings are not recommended.

First Level Heading 2

Begin new paragraph text here. If a heading falls at the bottom of a page without any text below, move the heading to the next page.
CONCEPTUAL FRAMEWORK

The Capstone Project should be based on modern and innovative approaches and ideas. The CONCEPTUAL FRAMEWORK section (i.e. literature review) is a documentation of existing literature, including a review of current thinking relative to the Capstone topic, a synthesis of science and education information related to the project. Include the framework of concepts, principles and theories underlying and informing the project.

Information and examples of Tables and Figures can be found in the DATA AND ANALYSIS section (p. 4). Formatting information is located in the REFERENCES CITED section (p. 11). Information about citing references in text is included in Appendix A.
The METHODOLOGY section is a description of methods selected and the treatments used to generate data for answering the capstone focus question. If a treatment was used, include it here. Table 1 is an example of a table in a Methodology section.

Information and examples of Tables and Figures can be found in the DATA AND ANALYSIS section (p. 4). Formatting information is located in the REFERENCES CITED section (p. 11). Information about citing references in text is included in Appendix A.
DATA AND ANALYSIS

Science and education data should be able to stand the tests of validity and reliability. Data display (i.e. tables and figures) and analysis should be appropriate to the question and setting of the study. Effort should be made to triangulate and synthesize together data from various instruments.

Tables should fit on one page and within the margins. If the font needs to be adjusted in order to fit the table on one page within correct margins, this is acceptable as long as it is clear and readable. Tables and figures need to be referenced in text (see Table 1).

<table>
<thead>
<tr>
<th>Focus Question</th>
<th>Data Source 1</th>
<th>Data Source 2</th>
<th>Data Source 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Question:</strong> 1. Student Understanding of Concepts</td>
<td>Preunit and Postunit Assessments (tests, quizzes, formative assessments)</td>
<td>Student Reflection Journals (content prompts)</td>
<td>Preunit and Postunit Student Interview Questions</td>
</tr>
<tr>
<td><strong>Sub-Questions:</strong> 2. Students’ Long-Term Memory of Concepts</td>
<td>Delayed Unit Test Questions</td>
<td>Delayed Formative Assessment Questions</td>
<td>Delayed Student Interview Questions</td>
</tr>
<tr>
<td>3. Students’ Attitudes and Motivation to Learn</td>
<td>Pretreatment and Posttreatment Student Survey Questions</td>
<td>Pretreatment and Posttreatment Student Interview Questions</td>
<td>Teacher’s Reflection Form</td>
</tr>
<tr>
<td>4. Teacher’s Motivation and Enthusiasm for Teaching</td>
<td>Teacher’s Reflection Form</td>
<td>Pretreatment and Posttreatment Student Survey Questions</td>
<td>Pretreatment and Posttreatment Student Interview Questions</td>
</tr>
</tbody>
</table>

Table Headings go above the table with Table number not italicized, but **Title Name italicized** on second line and no period. When appropriate, a **Note** may be included with a period. If **N** is used, the format is: **Note. (N=11).**
**Table 2**  
*Teacher Response for Field Notes Question*

<table>
<thead>
<tr>
<th>Project Phase (Likert Score)</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonintervention Unit</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Intervention Unit 1</td>
<td>2</td>
<td>7</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Intervention Unit 2</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note.* 5=Strongly Agree, 4=Agree, 3=Indifferent, 2=Disagree, 1=Strongly Agree. *(N=10).*

**Table 3**  
*Demographics for Review Method and Longitudinal Study Subgroups*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>BIOL220 Fall 2010 Non-peer review</th>
<th>BIOL220 Fall 2010 Peer review</th>
<th>BIOL302 with writing seminar</th>
<th>BIOL302 without writing seminar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size <em>(n)</em></td>
<td>32</td>
<td>55</td>
<td>22</td>
<td>19</td>
</tr>
<tr>
<td>Proportion female (%)</td>
<td>53</td>
<td>65</td>
<td>41</td>
<td>53</td>
</tr>
<tr>
<td>Proportion male (%)</td>
<td>47</td>
<td>35</td>
<td>59</td>
<td>47</td>
</tr>
<tr>
<td>Self-reported incoming GPA (% ± standard deviation)</td>
<td>73 ± 8</td>
<td>78 ± 8</td>
<td>75 ± 8</td>
<td>75 ± 8</td>
</tr>
<tr>
<td>Average number of credit hours completed</td>
<td>44</td>
<td>54</td>
<td>78</td>
<td>96</td>
</tr>
<tr>
<td>Proportion with health-related career goals (%)</td>
<td>53</td>
<td>60</td>
<td>45</td>
<td>32</td>
</tr>
<tr>
<td>Proportion with biology-related career goals (%)</td>
<td>16</td>
<td>16</td>
<td>55</td>
<td>68</td>
</tr>
<tr>
<td>Proportion undecided or with other career goals (%)*</td>
<td>31</td>
<td>24</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note.* BIOL220 is a required course for secondary science education majors.
Figure font should be Times New Roman. Ideally, use 12 point font, but it can be a bit smaller font if needed in order to fit the figure on one page. Keep it within the margins, as long as it is clear and readable.

Figure 1. Lee Self-confidence Pre-test Survey, (N=27).

Figure Headings go underneath with Figure number italicized and ending in a period. When appropriate, include (N=#) in parentheses and N italicized. Figure name is not italicized.
Figure 2. Student engagement by minute during self-tours, \((N=7)\).

Figure 3. Response frequency for pre-treatment Student Writing Attitudes Survey, \((N=90)\).


Figure 4. Strategies preferred by students when learning vocabulary, (N=81).
Figure 5. Relationship between the summative test scores and the ISN score during the unit on energy in ecosystems, \((N=64)\).
INTERPRETATION AND CONCLUSION

The Interpretation and Conclusion section is the interpretation of the project results, which should lead to clarification or resolution of the focus question. The project's claims should meet criteria for validity.
VALUE

The Value section is a summary of how the project expands, clarifies, validates, or invalidates the principles and/or process of science education. The results should generate new questions. The project should have implications for teaching-learning beyond your individual classroom or situation.
REFERENCES CITED
Author, A. (2014). *Title of Book*. City Location: Publisher.


Author, A. (2014). *Title of Chapter*. In E. Editor (Ed.), *Title of book* (pp. xx-xxx). Publisher.


[Photographs of Intercollege Programs for Science Education Department]. (ca. 2011). MSSE Summer Bulletin (Summer 2013). Archives, Montana State University, Bozeman, MT.


*Title of book.* (2014). Publisher Location: Publisher.
APPENDICES

If you have multiple appendices, you must have multiple divider pages: title page for each appendix followed by the appendix document.
APPENDIX A

CITATIONS IN TEXT FORMATTING GUIDELINES
Below are examples of in text citations. Follow APA guidelines.

1. **One work by one author:**
   Walker (2000) compared reaction times.
   In a recent study of reaction times (Walker, 2000) a discrepancy was revealed about the nature of the reactants.

2. **One work by two authors:**
   Walker and Smith (2000) compared reaction times.
   In a recent study of reaction times (Walker & Smith, 2000) a discrepancy was revealed about the nature of the reactants.

3. **One work by multiple authors:**
   a. When a work has three to five authors, cite all authors the first time, and in subsequent citations include only the surname of the first author followed by “et al.”
   As in:
   - Smith, Jones, & Johnson, 2004
   - Smith et al., 2004
   
   b. In the text, multiple authors are joined by and. In parenthetical citations and in the reference list, the names of the authors are joined by an ampersand (&).
   As in:
   - Hymes, Dunn, Gould, and Harris (1977) explained the importance of integrating inquiry into daily lessons.
   - The use of daily inquiry is important (Hymes, Dunn, Gould & Harris, 1977).

   *Omit the year from subsequent narrative citations in the same paragraph, i.e. Smith and Jones (2004) would be followed by Smith and Jones if mentioned again in the same paragraph. This applies to non-parenthetical citations; do include the year for all parenthetical citations.

4. **When a work has six or more authors:**
   Use only the surname of the first author, followed by “et al.” As in: (Kosslyn et al., 1996).

5. **When a work has a group author:**

6. **When inserting in a quotation, include page number:**
   (Cheek & Buss, 1981, p.332)
7. **Two or more works cited in same parentheses:**
Alphabetize by first author’s surname and separate citations with semicolons, as in:
(Balda, 1980; Kamil, 1988; Peperburg & Funk, 1990)

8. **Works with unknown author:** Cite in text the first few words of the reference list entry (usually the title) and the year. Such as: the book *College Bound Seniors* (1979)....

9. **Personal communications:** These include letters, memos, personal interviews, telephone conversations, etc...Because they are not recoverable data, they are not included in the reference list, but are ONLY cited in the text. Give the initials and surname of the communicator, as seen in the following two examples.

   T.K. Lutes (personal communication, April 18, 2000)
   (T.K. Lutes, personal communication, October 10, 2003)

10. **Electronic Sources:** If possible, cite an electronic document the same as any other document by using the author-date style.

    Lutes (2000) explained . . .

11. **Unknown Author and Unknown Date:** If no author or date is given, use the title in your signal phrase or the first word of two of the title in the parentheses and use the abbreviation “n.d.” (for “no date”).

    Another study of students and research decisions discovered that students succeeded with tutoring (“Tutoring and APA,” n.d.).

12. **Webpage Without Author:** When an electronic document has numbered paragraphs, use the abbreviation “para.” followed by the paragraph number (Hall, 2001, para. 5). If the paragraphs are not numbered and the document includes headings, provide the appropriate heading and specify the paragraph under that heading. Note that in some electronic sources, like Web pages, people can use the Find function in their browser to locate any passages you cite. When an electronic source lacks page numbers, you should try to include information that will help readers find the passage being cited.

    According to Smith (1997), ... (Mind over Matter section, para. 6).

13. **Citing Indirect Sources:** If you use a source that was cited in another source, name the original source in your signal phrase. List the secondary source in your reference list and include the secondary source in the parentheses.

    Johnson argued that...(as cited in Smith, 2003, p. 102).
APPENDIX B

MANUSCRIPT FORMATTING OPTION GUIDELINES
Manuscript Paper Option Guideline

MSSE students have the option to choose to do a science-based research project and paper. Science-based research projects requiring submission of a research paper to a referred scientific journal follow the guidelines of the referred journal. This research paper may be several scholarly manuscripts combined or journal articles addressing a common theme with each article constituting a separate chapter.

The Manuscript Option is a combination of formatting requirements of the MSSE Program and the formatting requirements of the publishing journal. Each student following the Manuscript Option will be required to also include the MSSE Capstone Front Matter. The formatting style of the main capstone body is the style used by the journal(s) where the paper has been or will be published.

Capstone papers incorporating the Manuscript Formatting Option must be 1) prepared, 2) submitted, 3) accepted, or 4) published for a peer-reviewed journal. A Contribution of Authors and Co-authors page precedes the first page of the body of the manuscript followed by the Manuscript Information Page.

The CONTRIBUTION OF AUTHORS AND CO-AUTHORS PAGE includes:
Contributions: Type List Contributions, Single Spaced
Author: Type Co-author name
Contributions: List Contributions Here, Single Spaced
Co-Author: Type Co-Author Name
Contributions: List Contributions Here, Single Spaced

Following the CONTRIBUTIONS OF AUTHORS AND CO-AUTHORS PAGE is the MANUSCRIPT INFORMATION PAGE and includes:
Type Author and Co-author(s) Names
Type Name of Journal
Status of Manuscript: (Put an X in one of the options below)
   ____ Prepared for submission to a peer-reviewed journal
   ____ Officially submitted to a peer-review journal
   ____ Accepted by a peer-reviewed journal
   ____ Published in a peer-reviewed journal
Type Name of Publisher
Type Date of Submission (month, day, year)
Type Date the Manuscript was Submitted
Type Issue in which Manuscript Appears Here (published work – otherwise leave blank)