



## WRITING ACROSS THE CURRICULUM

### Writing in the Health Sciences

Disciplines in the Health Sciences, including physical therapy, urban public health, community health education, communication sciences, and public health nutrition, require different kinds of papers, including **lab reports, proposals, evaluation reports, investigation reports, reviews or summaries, and research papers.** Because many areas of Health Science can involve methods of retrieving information—such as statistics, case studies, reports, and interviews—organization and clarity are of the utmost importance.

Keep in mind that this handout is a guideline. Always refer to your instructor's directions first, and ask questions concerning your assignment.

#### WRITING ASSIGNMENTS IN THE HEALTH SCIENCES

##### Lab Reports

The requirements of a lab report are often different depending upon the discipline, school, and certainly the instructor, so it is important to be attendant upon your instructor's guidelines before you begin this task. However, it is possible to make clear the more general requirements of a lab report, the goal of which is to document the writer's findings, and the procedures and results of a required laboratory assignment. Given this task of objectively conveying information, organization is a key factor in writing a lab report. A lab report may include, but is not limited to, the following sections:

##### Title Page

In this section, you provide the title of your lab experiment, all lab partners, and the date. Try to avoid giving lab report titles that are as uninformative such as "Lab #1," yet try to limit your title to ten words or less, offering a clear articulation of the experiment.

##### Abstract

This section holds to the same basic requirements of an abstract you might have to write for another kind of paper in the Health Sciences, Sciences, or Social Sciences. The abstract should summarize, in approximately 100-250 words, the main idea of the document to follow, answering questions such as:

- What was the purpose of this study/experiment?
- What did you do, and how did you do it?
- What did you find?
- What do your findings indicate?

If the experiment is about a new method or apparatus, the two last questions might be something like:

- What are the advantages of the method or apparatus?
- How well does it work?

Remember, the abstract must provide your reader with a preview of your report. The information you give must be understandable to readers without their having to read the rest of the report.

### **Introduction**

In this section, you must clearly state your thesis; in the case of a lab report, it should specifically state the objective of your experiment or the hypothesis on which it is based. The reader needs to get an accurate idea of where the rest of your paper is going.

### **Methods and Materials**

In this section, you must record all the materials you used in your experiment. It can be a simple list, for example, but it must be exact and provide all necessary information.

### **Experimental Procedure**

In this section, you describe, in chronological order, what occurred during the entire process of your experiment. Your description of the procedure you performed allows the reader to follow and understand all the stages of your experiment.

Note: Sometimes the **Methods and Materials** and **Experimental Procedure** sections are merged into one section. If you do this, you may wish to use subtitles

### **Results**

In this section, the information will most likely be quantitative as you provide the actual findings—the results—of your experiment. You are discussing what did result (not what did not result), so reflection on your part is not warranted. It is, however, a time for you to briefly and clearly explain the different types of information and give specific headings to them.

### **Discussion**

This is the most significant section in that in it you analyze and interpret the experiment's results. In addition, if any mistakes or confusions arose, you are expected to discuss them here. Merely reporting the expected and observed results is not enough because you need to show that you grasp the concepts behind the data. Therefore, you might take the following questions into consideration:

- If the expectations were different from the observations, how so and why?
- How did these differences affect your experiment?
- How do these results relate to the principles your experiment was designed to examine?
- Was there experimental error that would account for differences?

## Conclusion

In this section, you explain what conclusions can be drawn from your results and discussion. You may begin by asking yourself what general statement you can make about the experiment now that it is finished. Then, you can move to a more specific discussion of your outcome, addressing its implications and significance. You may also incorporate criticism and briefly review viable methods of improvement (but do not include such criticisms as, for example, problems you experienced with a lazy partner).

Note: The **Results**, **Discussion**, and **Conclusion** sections may be combined in different ways. Check with your instructor if this is permissible.

## References

Following the conclusion will be your references section. Documentation for research papers in the Health Sciences usually follows the APA format (American Psychological Association), but always ask your instructor which style is preferred, since other documentation styles, such as CBE, may also be acceptable.

The references section includes all of the sources that you have used in your paper. Your instructor may require an annotated bibliography, in which you provide a concise and clear summary of each source used. Annotating not only demonstrates a thoroughness of research, but it allows the reader to pick out any source of particular interest to her/him. In addition, you may want to include in your summary how the source is relevant to your experiment, if it is not apparent.

## Appendices

This section may only be necessary if you wish to include raw data, calculations, or graphs that are not in your paper. If you choose to include appendices, make reference to them at least once in your text.

**Note:** For further information on this format, please refer to the RWC handout, Writing Lab Reports.

## Proposals, Evaluation Reports, and Investigation Reports

Proposals, evaluation reports, or investigation reports often require, as does the lab report, a **Title Page**, an **Abstract**, **Discussion**, and a **Conclusion**. In addition, they may also include the following sections: **Background**, **Recommendations**, and **Attachments**.

### Background

This section provides contextual information that is needed to support, make relevant, or better familiarize the reader with the subject matter and concern of the report. For example, if you are writing an evaluation report that discusses a sudden abnormality in a patient, the background section would inform the reader of the patient's history. In this way, the abnormality can be more clearly understood or accounted for. Background will usually precede Discussion.

## Recommendations

This section, based on the background and discussion, may include your recommendations or proposals on what action or steps should be taken.

## Attachments

This section may include appendices or any other documentation relevant to your report. If attachments are included, a reference should be made to them in your text. You might write “See attachment 1.”

## Summaries and Critical Reviews

### Summaries

If you are summarizing a book or an article, the overall purpose of the text should be clearly stated. To summarize is to condense an author’s text to its main points and to extract those textual elements which you think are most important—the main idea (or thesis) and its essential supporting points (see the RWC handout, Guidelines for Writing a Summary).

You can, in a summary, provide a small amount of interpretation, but limit this aspect of your work. Your job is really to communicate the author’s central idea and the critical aspects of it. To a certain extent, analyzing a text to break it down into its constituent ideas and evaluating those ideas to determine the main points are in themselves acts of interpretation. A summary must make clear what you have chosen to perceive as the author’s purpose and why that is a reasonable choice.

### Critical Reviews

In writing a **Critical Review**, it is important not only to summarize, but also to explain your critical perspective on the work. Therefore, in a critical review, you will be expected to give the reader a clear sense of the writer’s overall purpose and meaning; to analyze how the text is put together by dividing it into its main sections or aspects; to interpret the significance of each part; and to assess the work’s worth or value. You might, for example, take these questions into account:

- Did the author use good resources to support the thesis?
- What did or didn’t work and why?
- Were there problems, experimental errors, or concepts not addressed?

**Note:** Remember, when pointing out these aspects, you should always provide specific examples. (See the RWC handouts, Guidelines for Critical Reading and Writing the Critique.)

## The Research Paper

**Note:** For more information, please refer to the Writing Center handout, General Requirements of a Research Paper

### Introduction

Like all essays and articles, a **Research Paper** has an introduction that includes a thesis statement or central idea (see the Writing Center handout on Developing a Thesis Statement). The introduction lets readers know what your subject matter is and what perspective you will take in relation to that subject matter; in this way, it prepares readers for the body of your paper, in which you develop evidence in support of your thesis statement or main idea. Whatever your topic may be, it will be supported by sources. In the Health Sciences, it is highly recommended that you use both **primary** and **secondary sources** in your research.

### Sources

**Primary sources** are materials and evidence that are, or were, directly involved with the topic under research. For example, if you are writing about an outbreak of a particular virus, your primary sources may be interviews with the victims themselves, medical reports, or other raw data.

**Secondary sources** provide information about primary sources, or the issue/topic under research. For example, an historical account of the spread of an epidemic in a particular society would be a secondary source. Secondary sources, including periodicals, books, and scholarly essays, are often interpretive in that they offer an understanding— sometimes comprehensive, other times more specific—of the subject matter.

### Conclusion

This section serves to inform readers of the overall outcome that can be drawn from the research. The conclusion closes the paper, 'summing up' the relationship of your thesis statement to the research and findings that you have presented in your paper.

### References

Following the **Conclusion** will be your **References** section. Documentation for research papers in the Health Sciences usually requires the APA (American Psychological Association) format, but you should always ask your professor which style is preferred as other documentation styles, such as CSE, may also be acceptable.

Your instructor may require an annotated bibliography, in which you provide a concise and clear summary of each source used.

## **TIPS**

### **Abbreviation**

Most likely, in the Health Sciences you will run into, and probably be familiar with, many abbreviations for medical or scientific terms. Try to avoid using these, as well as symbols, acronyms, and trade names, in your writing. If you do use abbreviations, clearly define them first.

### **Verb Tenses**

Verb tenses are often confusing when writing in the field of Health Science. You may have difficulty in choosing and staying consistent with tense. When you are explaining an experiment that you performed, or any other experiment that was performed, use the past tense. For example, “The object of the experiment performed *was* to. . . .” If you are writing about a theory, or a piece of equipment that is still functioning, even though you applied it in your experiment, you should use present tense. For example, “Theory A *states* that. . .” or “The microscope *scans*. . . .”