



# MODULE: ABSTRACT CRITIQUE

## OVERVIEW

### Learning Objectives

At the conclusion of this module, you will be able to:

- [Interpretation] Identify elements that should be found in an abstract
- [Interpretation] Define the importance and purpose of abstracts and the role they play in research
- [Evaluation] Critique an abstract for completeness and clarity

### Materials for this Module

- Handout 1: Abstract Guidelines and Examples
- Abstract from a research article from a previous module (talk with your mentor to choose an article for this exercise)

### Introduction

Abstracts are the first words anyone reads when they look at a paper, for better or worse. Because of this, it is crucial that your abstract is well written and clearly states why you are looking at a problem, what you did to solve the problem, and what the final conclusions were. It should be the hook that draws in potential readers. All in about 250 words. Which is not easy. So practicing writing abstracts will be very helpful for future technical writing. In this module, we will review a bad abstract and a good abstract and note the differences between them and discuss what makes a good abstract good.

### Writing an Abstract:

The abstract, although it comes first logistically, always should be written last. It needs to be written last because it is the essence of your work, drawing information from all of the other sections of the manuscript. The abstract explains why the experiment was performed and what conclusions were drawn from the results obtained. Generally, an abstract has five sections or areas of focus:

1. Why the experiment was conducted
2. The problem being addressed
3. What methods were used to solve the problem
4. The major results obtained
5. The overall conclusions from the experiment as a whole



# Research Experience and Mentoring

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Do not be misled from this list, however, into thinking that the abstract is a long section. In fact, it should be significantly shorter than all of the others. All of this information should be summarized in a clear but succinct manner if the abstract is going to be successful. An estimated average length for all of this information is only a single paragraph. Although this may seem as though it is a short length to contain all of the required information, it is necessary because it forces you to be accurate and yet compact, two essential qualities.

The best way to begin writing an abstract is to divide it into the sections mentioned above. The first two sections are very similar and can be grouped together, but do not have to be. If you decide to address them separately, make sure that you do not repeat anything. Often a section can be mentioned in only one sentence. Remember, brevity is the key to a successful abstract. Each section is addressed below to help clarify what needs to be included and what can be omitted.

The most important point to remember when writing the abstract is to be brief and state only what is pertinent. No extraneous information should be included. A successful abstract is compact, accurate, and self-contained. It also must be clear enough so someone who is unfamiliar with your experiment could understand why you did what you did, and what the experiment indicated in the end. An additional note is that abstracts typically are written in the passive voice, not with personal pronouns such as I or we.

## Assignment(s) for this Module

### Abstract Critique Activity:

Review Handout 1 to gain a sense of what is required for a critique, and to see examples of poorly written and well written abstracts. Next, talk with your mentor and choose an article that has already been part of your discussions for a previous module. Review the abstract for the article and provide a critique. Identify the key elements of the abstract as well as missing or incomplete elements of the abstract. Describe any strengths or weaknesses of the abstract. If your mentor does not assign an article, consider reviewing these:

- <https://link.springer.com/content/pdf/10.1007/s10439-017-1909-2.pdf>
- <https://royalsocietypublishing.org/doi/pdf/10.1098/rsta.2010.0002>

**Deliverable 1: Document your responses to the Abstract Critique Activity.**

### Five-Minute Reflection:

1. Formulate one question to discuss with your mentor (maybe a concept you are unclear on, something you found interesting, etc.)
2. What information did you feel was the most informative? Least?
3. What is the purpose of an abstract?

**Deliverable 2: Document your responses to the Five-Minute Reflection.**

### Mentee Deliverables:

- **Deliverable 1: Responses to the Abstract Critique Activity (Overview).**
- **Deliverable 2: Responses to the Five-Minute Reflection (Overview).**



## Discussion with Mentor:

- Importance of abstracts
- Five-Minute Reflection

## Summary

- An abstract is the hook that draws in potential readers. Having a well written and clearly defined abstract is critical when writing a paper.
- An abstract should state why you are looking at a problem, what you did to solve the problem, what the final conclusions were, and should be no more than 250 words.

## Checklist

### Prior to Meeting with Mentor:

- Review Handout 1: Abstract Guidelines and Examples
- Complete Abstract Critique Activity
- Complete the Five-Minute Reflection