

# UNDERSTANDING SCIENTIFIC ARTICLES

It can be challenging to read scientific articles because they tend to be written for audiences who are already fairly familiar with the topic being discussed, so always make sure to look up key ideas that you are not familiar with. When reading scientific articles, it is helpful to understand their organizational structure so that you can develop methods for reading most effectively.

Reading scientific literature can seem daunting at first; however, it can be quite rewarding when you understand how to do it well!

## ORGANIZATION

When reading an article about a conducted study, it is important to understand the main sections:

1. **Abstract:** serves as a summary of the article. Abstracts tend to include the study's hypothesis, major findings, and conclusions. Reading the abstract can give you an idea of whether a particular paper will be helpful for your research.
2. **Introduction:** provides general background information about the topic being studied. Additionally, it includes the authors' thesis statement and hypothesis for the study.
3. **Methodology:** explains how the study was performed. It can be important to review this section carefully to determine whether the study was structured adequately so that meaningful data can be derived from it.
4. **Results:** displays the data that was collected based on the research's methodology. This section is primarily made up of tables and figures.
5. **Analysis and Discussion:** presents the main findings that could be derived from their results. The authors then discuss the implications and applications of these findings.
6. **Conclusion:** provides the authors' thoughts on the study itself. This includes how the study supported or refuted their hypothesis, how the study could be improved, and what its findings imply for future research.

Since journal articles are generally written for an audience who is familiar with the topic at hand, it can be difficult to understand them if you are new to the topic. When approaching a new or complicated topic, it is helpful to develop a reading strategy so that you can best understand the article. Below is a common reading strategy that allows you to understand the goals and conclusions of a paper before you have to analyze complicated methodologies or results.

1. Always begin by reading the **abstract** so that you can gain a general understanding of the scope and conclusions of the study to determine whether it is applicable to your research.
2. Next, read through the **introduction**. The introduction usually includes citations after most sentences, so if there is a concept you do not understand from the article, you should see if the source they cite explains it better.
3. After that, read the **conclusion**. This will give you an idea of what the study was able to prove or support.
4. As you move on to read the **methodology**, you should ask yourself several questions to frame your understanding of how the results will be collected. Ask yourself some of the following questions:
  - a. Is the data qualitative or quantitative?
  - b. Would it have been possible for the conclusions of the paper to have been reached through this experiment?
  - c. What assumptions are made in this methodology?
5. Next, when you read the **results**, make sure you understand any tables or figures that the authors provided. Try to determine what parts of this data are significant and consider what conclusions could be drawn from them.
6. After you read the results of the study, you can move on to its **analysis and discussion**. Compare your interpretation of the results with theirs. Consider whether their interpretations of the results are reasonable.

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