

### READING A RESEARCH ARTICLE

Scholarly journals (also described as “academic” or “peer reviewed”) contain various types of articles. A **research article** reports on an original experiment or study designed to investigate certain questions or problems. The study or experiment is carefully conducted, data is collected and analyzed, and the results are reported in a journal devoted to the discipline in which the research was conducted.

A **research article** should not be confused with a **literature review**, which summarizes the important literature written on a particular topic. A review article is more than an annotated bibliography. It describes, evaluates, and analyzes the literature, and it identifies and articulates relationships between the various studies. A literature review does not present any new research; it only provides an analysis of studies that were conducted previously.

Another type of article in academic journals may present information about theories or principles that are supported by substantial evidence. While the authors may *refer* to research that was conducted by others, the article does not describe and present data from a new study.

The purpose of this study guide is to provide assistance in understanding the structure and evaluating the content of **research articles**.

#### Anatomy of a Research Article

When researchers publish the results of their studies, they present the information in a predictable way. Knowing the structure of a research article can help you to read the report with more understanding.

While there may be some variation, the basic parts of a research article are:

1. **Title** – should clearly and concisely represent the key concepts of the study
2. **Author** – name (or names) and institutional affiliation are listed
3. **Abstract** – provides a brief summary of the article; gives an overview of the research strategy and findings.
4. **Introduction** – gives the rationale for conducting the study; articulates the research questions or problems; explains the findings of others; presents a review of the literature.
5. **Methodology** – written in three parts
  - a. **Sample** – describes in detail the research sample and how it was chosen
  - b. **Data Collection** – explains what information was gathered and how the data was collected
  - c. **Measures and Equipment Used** (if applicable) – describes how the data was measured or analyzed

6. **Results** – presents explanation of results in text and usually includes charts, graphs, and tables
7. **Discussion** – explains the significance of the research and discussed limitations; suggests future studies
8. **References** – an alphabetical list of sources cited in the paper and used to support the research

## Reading Strategies

It is often helpful to read the **title**, **abstract**, and **discussion** of a research article **before** reading it from beginning to end. Reading these sections can help you to identify the main purposes and conclusions of the study and to determine whether or not to read the entire article.

As you read the discussion, try to determine the conclusions or what was learned from the study. If the conclusions are not clear, read the results section. Once you understand the the significance of the study, go back and read the entire article.

## Evaluating Research Articles

The following questions may help you to critically evaluate research articles. The questions are quoted or adapted from the articles written by Lunsford and Lunsford and Rumrill et al., which are cited below. Keep in mind that the relevance of individual questions may depend on the research methods used in the study.

### 1. Title

- Does the title describe the study clearly?
- Do the key words in the title express the key concepts of the study?
- Is the title clear and concise?
- Does the title entice you to read further?

### 2. Abstract

- Does the abstract briefly state the purpose, method, results, conclusion, and clinical relevance of the study?
- As you read the abstract, did you learn the essence of the article without the details?
- Does the abstract provide enough information to enable you to determine whether you want to read the entire article?

### 3. Introduction:

- Does the author clearly identify the research problem or question?
- Is the problem significant enough to warrant a study?
- Do the authors use theory to provide a framework to support the study and to guide the analysis?
- Does the review of the literature seem complete, current, and appropriate?
- Are the purposes of the study clearly explained?
- Is there a clearly stated research question or hypothesis?

#### **4. Methods:**

- Is the sample clearly described, in terms of size, relevant characteristics, etc.?
- Was the sample appropriately selected?
- In the case of an experimental design, was an appropriate control group used?
- Are the materials used in conducting the study or collecting data clearly described?
- Are the scientific procedures thoroughly described and presented in chronological order?
- Could someone replicate the study from the information provided?
- Is the data analysis well-described and appropriate?

**Note:** Some research papers do not include a description of the methods, but instead include a reference to a source where such a description can be found. This is an acceptable practice and does not affect the quality of the article.

#### **5. Results:**

- Is the results section clearly written and well organized?
- Are the data summarized?
- Are the important results connected directly to the hypothesis?
- Are results statistically significant?

#### **6. Discussion:**

- If there was a hypothesis, was it accepted or rejected?
- Are the findings discussed in terms of the conceptual framework, research problem, and/or hypothesis?
- Is further literature cited to address the findings?
- Are the limitations of the study delineated?
- Are suggestions for further research appropriate and are they clearly stated?

#### **7. Conclusion (sometimes omitted):**

- Are the results briefly restated?
- Do the conclusions follow from the results?

#### **8. References:**

- Is the reference list sufficiently current?
- Do the works cited reflect the breadth of existing literature on the topic of the study? For example, does the works cited list compare favorably with the works cited for articles written on similar topics?
- Are citations used appropriately in the text?

#### **9. General Impressions**

- Is the article well written and organized?
- Does the study address an important problem?
- What are the most important things you learned from this study?
- What do you see as the most compelling strengths of the study?
- How might this study be improved?

## Sources

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