

Research Article

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How to Write an Effective Discussion in a Research Paper; a Guide to Writing the Discussion Section of a Research Article

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Abstract

Discussion is mainly the section in a research paper that makes the readers understand the exact meaning of the results achieved in a study by exploring the significant points of the research, its implications in different areas of the study, and the improvements that the study can make for future developments. However, it is commonly challenging for researchers to realize what should be covered in the discussion section of a research paper and how to write it to ensure it helps to sell the research paper to the audience. The main aim of this article is to provide information on writing the discussion section appropriately in a research paper. For doing this, more details about the purpose of writing a discussion in an academic research project are provided and differences between discussion and introduction are clarified. Then, the important points that need to be considered or avoided in a standard discussion section are discussed.

Keywords: Discussion; Research; Guide; Article; Academic Paper; Research Project; Research Process; Research Sections; Research Elements

What Does Discussion Mean in a Research Paper?

In a research paper, the hypothesis, the purpose, and the design of the study should be regarded initially. You need also describe your research methods, collect data, analyze them and then obtain the results. Now, you are ready to add the discussion section with the aim of providing more effective implications about your study (based on the results) and achieving the real meaning of your result.

Generally, this section includes an evaluation and interpretation of your result as well as the differences between them and your written hypothesis discussed in the initial parts of your paper. However, the critical point to consider is thinking about this section at the beginning of the research process, even though it comes at

the end of the paper. For this purpose, you should design specific questions based on the outset of your study. These questions should be developed based on the following:

- The importance of the study
- The relationship between the study and previous similar ones
- The limitations of the design of the study [3].

It can be also noted that, in some other kinds of papers, for example reaction papers or essays, discussion section is used to gain a summary about the main points of the research paper together

with the reflections and connections and the previous statements as well [1]. Considering all these points, discussion section provides the last chance for the researcher to sell the research paper to the audience [5].

What are the Differences between Discussion and Introduction Sections?

In the first section, we provided the main properties of a good discussion section, but to gain a better understanding, we aim to compare this part with the introduction in a research paper.

First of all, the main aim of introduction is to provide the answer to the question about the needs of conducting the research. However, discussion as explained before, aims to provide an interpretation about the results to help you gain a better understanding.

Secondly, discussion includes the answers to research questions and it also discusses whether the results support the hypothesis or not. However, in the introduction section, the hypothesis or the research question are disclosed.

Another difference is based on the content of these sections. Introduction aims to provide the current knowledge about a topic to achieve the gaps in the field of the study. On the other hand, discussion lists the finding of your study and recommends the gaps that can be considered for future works.

Finally, you need to gain a specific objective from general information in the flow of an introduction. The flow of discussion; however, is inverse and at the end of this section you can implicate for a relevant general population from your initial specific results [5].

How to Write a Discussion Section?

The method of writing a standard discussion section will be discussed in this section. The paragraphs are written based on the following points:

The first section of a discussion, also known as the opening section, is the most challenging part to write. It can be shaped using different constructions. Most authors start the discussion section answering the research question using the data of the result section to gain the central conclusion of the study. It can be also started using the re-description of the main purpose and encompass the results of some other works to support this purpose [2]. However, this section can be also shaped using a general summary of the findings without any details and based on the previous sections of the paper. This helps the readers who want to gain an overview of the study without reading the results and methodologies [5].

In the next section, a subjective judgment is required. For this purpose, a framework should be used based on the four following steps: interpret results, compare or contrast results with other relevant ones both with similar and different results as they are provided in the literature, account for results, and finally evaluate findings [4].

Next, the limitations and strengthen points of the research should be added based on different points such as objectives of the

work, the characteristics of the participant or conduct of the paper, and finally the needs of sensitive, or specific tests. Then, it should be explained how the limitations can affect the results of the study and what countermeasures were applied to face them. Unexpected findings should be also provided in this section.

Then, present and implicate the findings of study based on the whole evidence from both the previous results and the current work, and then cite what your result can add to the state-of-the-art knowledge in this field. The validity and applicability of the result should be also discussed based on the achieved data and without exaggerating the importance of the study.

Finally, state whether the results support the hypothesis or not and add both un-answered questions and new questions raised by the research for future studies. If results disprove the hypothesis, the reasons behind the differences should be also explained [5].

What Element Should Be Included and Avoided in a Discussion Section?

Generally, a discussion section aims to show the advantages and merits of your research to the readers. Based on this statement, it should include some elements. These particles are listed as the following:

Main Findings: The most important findings of your research should be listed at the beginning of the discussion directly, declaratively, and without including any data. For example, our results show that has no effect on....

Meaning and Importance of Your Findings: you should explain the meaning of your results, and their importance without overbearing or unbending statements. You should help the reader to easily understand the results of your work. Because most of the readers do not prefer to go through the results multiple times and thus, in this situation your work would be forgotten and disregarded.

Relationships with Other Studies: All studies are shaped based on the questions raised from other works. These questions motivate you to conduct a new study. On the other hand, findings of other research works can support your study.

Different Explanations: Instead of considering those explanations that fit your viewpoints, go through all possible explanations. It helps you to find the truth, not just being trapped into a specific design. You should not conclude based on just your biases. Therefore, try to discover, not just proving your bias.

Limitations and Suggestions: As all studies may face limitations, it is recommended to discuss the limitations of the study in the paper instead of waiting to find them in the works of other researchers in the future. It is also possible to make some suggestions based on these limitations or the remaining questions at the discussion section.

On the other hand, there are some general points that should be avoided in the discussion section:

Impress Others: First of all, keep in mind that the discussion is not a forum for the researcher to impress others with knowledge regarding the subject.

Over-Interpretation, Unwarranted Inflation and Irrelevant Points: Nothing should be interpreted beyond supported data and the unwarranted inflations to avoid readers' objections should be discussed. You should also stay on the main hypothesis and research questions and avoid considering other irrelevant issues or critiques on the other researches, as this is not the section to attack the results of other [3].

In the last part of this section, important general rules which should be considered when writing a discussion section are provided. These points are listed following:

- Make sure that the language is concise and clear to prevent misunderstandings.
- Use active voices as the predominant structures and add some mixtures of active and passive sentences as well.
- Use tables and figures to explain complex mechanisms. However, they are rarely used in this section [5].

Conclusion

The result of the research can be described in the conclusion section at the end of the paper. This section provides information regarding the path a researcher can write a discussion section as well as the points to consider and avoid achieving a technical

discussion. Considering the above statements, discussion covers the following points:

- States the most important finding of the research;
- Relates results and previous studies;
- Explains findings of the research;
- Provides an acknowledgment about limitations of the work;
- Finally, it makes suggestions for further researches.

Acknowledgement

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Conflict of Interest

Author declare no conflict of interest.

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