

The “discussion” in a research paper

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When you write a research paper, it is read by two groups of people. The first, which is a substantial group, consists of ‘lay’ readers, who assume that what is said in any research paper is the Gospel. They read the abstract or, worse still, *only* the results and store the information away for later use. For example, if you concluded in a study abstract, that penicillin is the best antibiotic available today, they may start using penicillin right away, on the very next patient, quoting you as a reference, without understanding or going into the details of the associated pros and cons.

Then, there is the other smaller group, which will read through the whole paper at length, as it ought to be read. They will especially read the discussion, because, this section should ideally bring out all the pros and cons of the results that were obtained. For any good reader, critical appraisal of a paper is part of his/her reading activity and a good discussion, along with a good ‘Materials and Methods’ section, helps the appraisal process.

The discussion, in a sense, is a complete appraisal of the results by the author himself and should explain in sufficient detail, the various aspects of the results. If you have nothing to discuss, then your ‘paper’ is not worth more than the actual paper it is written on!

General rules to adopt:

- Do not be verbose or repetitive.
- Use simple language—be miserly with the use of words!
- Follow a logical stream of thought.
- Do not take liberties with the English language.
- Use the present tense for the discussion, especially for established facts; however, refer to specific works and references in the past tense.

Rules and methods to follow while writing the discussion:

- Start with the major findings in your work. Explain why such findings should have occurred and discuss other possible explanations
- It is then logical to compare with other similar works, explaining the possible reasons for the differences. This will bring up the limitations of the study and suggestions for future work.

- Do not gloss over the limitations of the study—a true researcher knows that this may set the tone for future work.
- State the immediate clinical relevance of your findings clearly.
- Touch upon the direction—‘Where do we go from here and what needs to be done next.’
- A discussion can have a conclusion—one line with the sum and substance of the whole paper, for example, ‘Bronchial artery embolization is useful in treating patients having *massive hemoptysis* due to *pulmonary TB*.’

Remember, a discussion is not the same as story telling!

If the research is original, at least in substantial part, the discussion too will be original. It brings out the author’s own thought processes as he/she explains the results of the study and their relevance. In our country, it is only too often seen that substantial parts of the discussion are plagiarized. *Plagiarism is very easy to detect*, especially with the availability of search engines. When the language and tone of the author’s ‘work’ and the (plagiarized) discussion do not match, journal editors simply have to check the sentences in the discussion through search engines to find the original source. Many journals editors will not take this lightly. Plagiarize at your own risk; the risk of being disgraced in a journal, in full view of one’s colleagues. This is not something any author would like!

One of the main objects of the discussion is to set forth a complete and plausible explanation or theory for what was found. No one knows the subject of your research as well as you do; on the other hand, the average reader has no time to re-read the discussion if he/she did not understand it the first time around. You do not want the reader to go through your paper several times to understand it—he/she simply will not. You have to be clear and logical in what you say and explain it in a way that makes sense the first time around. This is the most difficult part of writing a discussion.

What are the things that you should avoid while writing a discussion?

1. Do not overstate the importance of the findings; this will not stand public scrutiny, and even credible parts

- your research will get discredited if you do so.
2. Similarly, do not speculate. All that you say should be based on known facts or the findings of your work in the paper, and your explanations should be logical and verifiable by future research.
 3. While comparing with others' work, avoid criticizing your colleagues. Your remarks should be gentlemanly and should not hurt anyone.

A final piece of practical advice: Do not be in a hurry. After you write the first draft, literally sleep over it for a few days; a week or so later, take it out and reread it. Often, you yourself will be surprised as to how badly it reads, so edit, edit, and edit. Once you are really satisfied, share it with a colleague, preferably from another specialty. If he can understand it, then it is fine. You should also definitely

do this exercise if you have problems with the English language. Make sure that someone with a good command over the English language checks your paper for errors and possible communication problems. Bad language is a sure-shot 'no-no' for editors.

When all this is done, you are all set to send off the paper. It takes time and patience to write a good research paper. The discussion is the most difficult to write, as it contains the most original thought. Careful attention to details and following the rules stated above should help you write a good discussion and a good paper.

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Author Help: Online Submission of the Manuscripts

Articles can be submitted online from <http://www.journalonweb.com>. For online submission articles should be prepared in two files (first page file and article file). Images should be submitted separately.

- 1) **First Page File:**
Prepare the title page, covering letter, acknowledgement, etc., using a word processor program. All information which can reveal your identity should be here. Use text/rtf/doc/pdf files. Do not zip the files.
- 2) **Article file:**
The main text of the article, beginning from Abstract till References (including tables) should be in this file. Do not include any information (such as acknowledgement, your names in page headers, etc.) in this file. Use text/rtf/doc/pdf files. Do not zip the files. Limit the file size to 400 kb. Do not incorporate images in the file. If file size is large, graphs can be submitted as images separately without incorporating them in the article file to reduce the size of the file.
- 3) **Images:**
Submit good quality colour images. Each image should be less than **400 kb** in size. Size of the image can be reduced by decreasing the actual height and width of the images (keep up to about 3 inches) or by reducing the quality of image. All image formats (jpeg, tiff, gif, bmp, png, eps, etc.) are acceptable; jpeg is most suitable. The image quality should be good enough to judge the scientific value of the image. Always retain a good quality, high resolution image for print purpose. This high resolution image should be sent to the editorial office at the time of sending a revised article.
- 4) **Legends:**
Legends for the figures/images should be included at the end of the article file.