

GUIDES TO UNDERTAKING RESEARCH

6.8 Writing the Discussion Section of a Manuscript

After the scene has been set in the manuscript Introduction and Methods, the data that supports the manuscript is detailed in the Results and figures. Once all this is in place in the draft the Discussion section is the last part to compose. It is often viewed as the dull anticlimax at the end but in fact it plays (or should play) an essential role in interpreting what the data and outcomes means and how they fit with the rest of the literature. The Discussion section does have some particular requirements, so here we discuss how writing it can be approached.

It is true that the Discussion section is probably the least consulted part of the manuscript because its full appreciation requires a fairly deep knowledge of the subject that not all readers have, and not all readers wish to acquire. A notable and key exception will be peer reviewers, who will scrutinize it very carefully indeed. Ideally they will find the strengths of the study are made clear and any apparent problems with the data interpretation addressed in a scholarly way.

Thus, even if it is a little arcane the Discussion must be good. There are manuscripts where the data more or less speaks for itself, but even there the Discussion must pass muster. It is in the Discussion section that the outcomes of the manuscript are linked clearly to the current state of knowledge about the subject of interest. There also the data (and its interpretation) should be subjected to withering critique yet remain standing, if perhaps quivering a little. The Discussion should also include brief summaries of other studies relevant to the subject; for this there is sometimes an opportunity to have a little fun (but only a little) by critically evaluating the work of other groups.

The most common mistake

A frequent flaw in Discussion sections is to simply recapitulate the Results. That self-evidently does not add value, so if the Discussion section reads like a re-run of the Results section then it is bad, as the peer reviewers will helpfully point out. A brief summarising of the main Results is indeed needed, but that is all. A Discussion section differs quite

fundamentally from a Results section because it discusses (the clue is in the name) the study outcomes. Conversely, the Results section should contain very little discussion of outcomes, enough only to link the parts of the Results section fluidly.

The first part of a Discussion section

For the Discussion section to draw together the themes raised in the manuscript, and link it to current state of knowledge, a brief recapitulation of the main study results is usually needed. The length of this part varies, and some even leave it out. The choice will depend on the study, but if it is included it should be concise, fluent and limited to the topics to be discussed. This summarization can occupy the first paragraph or so, as if it is much longer it is encroaching on the actual discussion.

An alternative structure can be to break up the results summary into parts and disperse it around the Discussion section. This style is used when the results/outcomes naturally fall into distinct parts that each need their own particular discussion.

After summarizing the Results, talk about what they mean and how good or bad they are.

This is mainly what a Discussion section is for. The Results should be discussed in terms of their reliability, strengths and weaknesses and contrasted with other published work. This mulling over of the Results should raise key features and conclusions of the work, the most important of which will also appear in the abstract.

The Discussion should contain support for a thesis

A thesis, or proposition, is usually the focus of a paper, unless the paper is purely descriptive in nature. The Discussion will put forward that thesis and examine how it is supported by the study results (and other peoples studies), rather than simply displaying learning and erudition or showcasing a lot of all the hard work. The Discussion is where the ideas underlying the study will emerge based on what survives critique. The tone should be disinterested, and display a real sense of curiosity and interest in what the outcomes might mean.

Explain what should be done to fix particular weaknesses in the paper

It is important not just to expose the weaknesses of the paper but to try to fix them as much possible. Where there is a remedy for a particular weakness (e.g., do a bigger study) it must be clear that this is beyond the scope of the manuscript. If you mention an easy or apparently easy fix for a perceived flaw in the manuscript you may well be asked by the peer-reviewers to go away and do it before the

work can be accepted publication. For this reason so care and thought is needed round this issue. If the fix is not so simple, it should be explained why.

Linking the work to the wider literature

How does the data relate to what others have seen? Has it reproduced the observations of others? All the relevant literature must be cited, unless it is very extensive in which case cite the main studies and reviews.

The Conclusion

In some journals the Conclusion is a separate section, but if not it will be located in the last paragraph or two of the Discussion. It should briefly mention again the main problem or question that the study set out to address, the main features of the Results and what was concluded from these in the light of the current body of knowledge. After that there is only a wrapping up sentence, perhaps a peroration or high point that inspires enthusiasm for the work, hopefully summarizing what it means and what it points to for future studies.

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