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Writing a Scientific Paper

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Introduction

As you progress in your studies you may be required to write a scientific paper. This is your opportunity to showcase the research you have carried out and demonstrate your skills as a researcher and writer to potential employers, fellow academics or funding bodies. Therefore, it is important that the paper is clear, concise, professional and showcases why your work is worthy of attention.

Planning your paper

It is important that you spend time planning your approach and being sure that you have clear focus.

1. Consider what data you will need to provide relevant and supportive evidence.
2. Be certain that you have all the necessary information from your target publication; check to see if there is a style guide you need to follow.
3. What ethical procedures need to be followed both in this country and any that might be affected by your research?

Format

Abstract

The abstract is really the summary of your paper and may include:

1. Question / purpose
2. Experiments
3. Results / description
4. Conclusion / implication (Hofmann, 2010)

It may include some background information from the introduction but needs to be kept brief.

Introduction

Hofmann (2010) suggests that the introduction needs to start off with setting the context and giving an overview of research that has been carried out including associated problems and areas to be investigated. This should then progress to discuss the contribution made by your research. The introduction is important as it helps to set the context for your work and helps the reader understand your approach to the research.

Materials and Methods

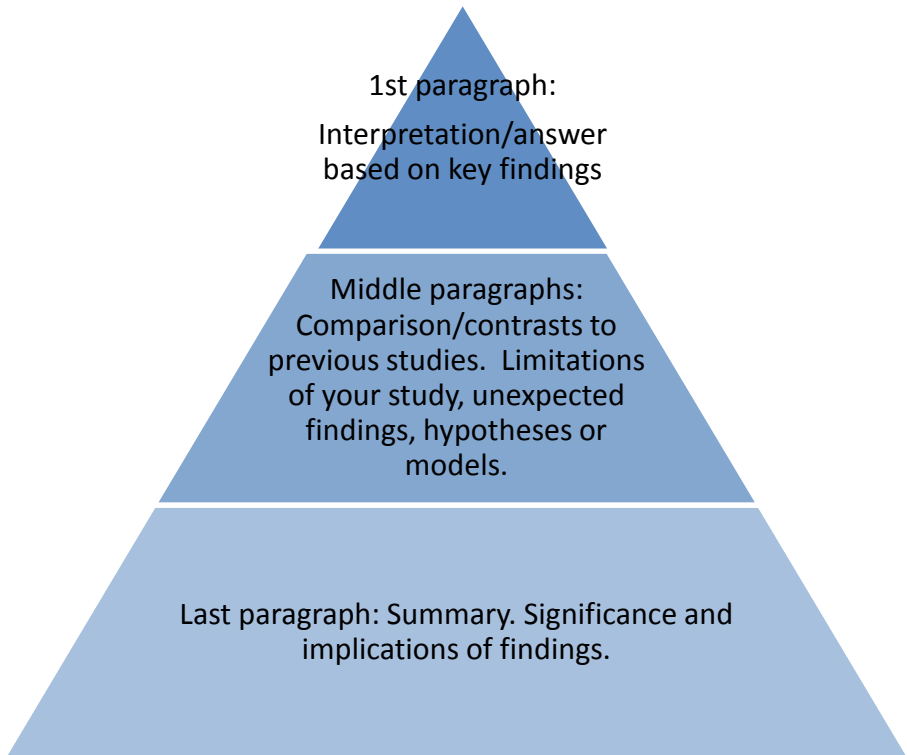
This section needs to be well organised with all information presented in a logical order, with emphasis on the most to the least important. The reader needs to be able to repeat the experiment themselves so be sure to give specific details such as concentrations, amounts, temperature, pH, time etc. To help organise the content it may be appropriate to arrange the writing in sections and sub-sections. Remember to make it clear how the different paragraphs or topics link and the relevance of information that may not seem immediately obvious.

The Materials and Methods section can be quite lengthy as it contains a considerable amount of information so it is important that you make sure you are consistent in your use of tenses throughout. If you are reporting on an experiment which took place in the past, use the past tense.

The Results section

The Results section reports main findings as well as other statistical information, so it is very likely that you will include graphs, figures and tables in this section. Make sure that you are consistent in the labelling of your images with **t**ables being labelled at the **t**op and **f**igures at the **f**oot. In common with the materials and methods section present your results in a logical order either chronologically or from most to least important. If you draw conclusions, make sure these are clearly supported by evidence, so do not be tempted to exaggerate findings or to be speculative.

Discussion



(Hofmann, 2010)

Organisation of middle paragraphs

When writing the middle paragraphs be systematic in your approach and work from the most to the least important or as appropriate to science.

Remember the person reading your paper will be inquisitive and will want to know why you reached the conclusions you did, why you dismissed certain approaches and how you interpreted unexpected findings. It is important to constantly check that you have provided evidence and that you have not made any assumptions or overlooked key findings.

Summary and conclusions

Your reader needs to be clear as to what your conclusions are. This section can be quite short and concise so that there is no ambiguity as to what the results indicate.

Reference list

Hofmann, A.H. (2010). *Scientific Writing and Communication*. Oxford: Oxford University Press.

Lindsay, D. (2010). Scientific Writing: Thinking in Words. Retrieved from <http://www.EBSCOhost.com>.

Matthews, J.R. & Matthews, R.W. (2008). *Successful Scientific Writing* (3rd Ed.). Cambridge: Cambridge University Press.

Nirmalan, N. (n.d.). Scientific Writing: critical review and appraisal.

University of Leicester Learning Development Unit. (2009). *Writing for Science*. Retrieved 13 February 2014 from www.le.ac.uk/succeedinyourstudies

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