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| **000 –** [**DISCIPLINE CODE**](http://advancedscience.org/eng_disciplines.pdf)  **RECEIVED \*\*.\*\*.\*\*\*\* ACCEPTED \*\*.\*\*.\*\*\*\* PUBLISHED \*\*.\*\*.\*\*\*\*** | |
|  | **TITLE OF MANUSCRIPT**  **Author name (e.g. R. Johns)**  **Author Affiliations, Author Country author e-mail** |

The title of your manuscript should be concise and informative. It should not be vague and general but should encapsulate the essence of the research. Your title should be no longer than 15 words. The title is generally given together with your name, affiliation and contact details.

**Abstract.** The abstract is a precise summary of the whole manuscript. Its function is to preview the contents of your manuscript so that the reader can judge whether it is worth their while to read the whole manuscript. It includes a statement of the aim or objective of the experiment, a short description of the method used, the main results, and the conclusions or implications of the results. The abstract should be a single paragraph between 100 and 200 words. It should be titled with the word 'abstract'. Given the small amount of words allowed, each word and sentence included in your abstract needs to be meaningful. In addition, all the information contained in the abstract must be discussed in the main body of the manuscript.

### Introduction

In your introduction, you need to let the readers and markers of your manuscript know why the manuscript is important and what exactly the manuscript is about. It is essential to establish these things because it places the reader/marker in a better position to understand the significance of the material presented in the rest of the manuscript. Although the introduction comes at the beginning of the manuscript, it is not the first section you should write. It is easier to write the introduction after you have dealt with your method and results section because that way you are introducing the section with knowledge about what you did and what the results were. This knowledge allows you to shape your introduction so it leads up to your findings more specifically.

In your introduction, you need to answer questions such as

* What do you hope to learn from the research?
* What question is being asked?
* Why is this research important?

The introduction starts generally, introducing the broad context within which your research fits. You need to provide a review of the literature that impacts on your research area. The literature needs to provide the reader/marker of your manuscript with:

* an understanding of the conceptual and theoretical background, context and justification for the research you are undertaking;
* an appreciation of the significance of this area and in particular your topic; for example,
  + why does this question need researching and
  + how does it contribute to, fit in with, or differ from other available work on this subject?

With your literature review should follow the pattern: it should review studies to establish the general area, then move towards studies that more specifically define or are more specifically related to the research you are conducting. It is important to note that your literature review MUST NOT be a series of quotations strung together; instead it needs to provide a critical analysis of previous work. Your literature review uses both the past tense and the present tense.

The past tense is used to refer to a particular experiment and the specific results of a particular experiment that has been carried out in the past. The present tense is used to refer to information that is not confined to a particular experiment.

The introduction ends with a statement of your specific hypothesis or hypotheses. This statement of the hypothesis should logically follow on from your literature review and you may want to make an explicit link between the variables you are manipulating or measuring in your study and previous research. The present tense is used to state your hypotheses.

There is no need to write the title Introduction before this section: its position at the start of the manuscript identifies it as an introduction. Some departments or research fellow may require you to include the aims or objectives of your study in a separate section after the Introduction so you should check this with your research fellow.

### Method

The purpose of this section is to precisely describe method and materials used to conduct your experiment with enough detail so someone else could repeat the same procedure. You also need to explain and sometimes justify why you chose a particular method. Finally, it is important to add any extra information or observations, such as changes to the method generated via the results of a pilot test or changes caused by some accident.

The method section should be written in paragraph form with as little repetition as possible. This section will often be broken down into subsections such as participants, materials and procedure. The subsections you use will depend on what is useful to help describe and explain your experiment.

In the method section of the manuscript you should use the past tense since you are describing what you did; for example,

* A dilution series was performed…,
* The participants were instructed to ... .

Furthermore, as the focus in this section is on what was done rather than who did it, the passive voice is used as it aims to foreground the action, rather than the doer of the action.

### Results

This section describes but does not explain your results; it provides the reader with a factual account of your findings. You can, however, draw attention to specific trends or data that you think are important. Your aim in your results section is to make your results as comprehensible as possible for your readers/markers.

If you are presenting statistical results, place descriptive statistics first (means and standard deviations) followed by the results of any inferential statistical tests you performed. Indicate any transformations to the data you are reporting; for example, you may report percentage correct scores rather than straight scores. Raw data and lengthy whole transcripts of qualitative data should be put in the appendices, only excerpts (descriptive statistics or illustrative highlights of lengthy qualitative data) should be included in the results section.

In the results section you will need to use both the past tense and the present tense. The past tense is used to describe results and analyses.

The present tense is used with results that the reader can see such as means, tables and figures.

Since you are presenting your results, not the figures which represent the results, you should ensure you refer explicitly to your results and not just to your data figures (graphs, tables). As you describe particular results in the text of your results section, make sure you refer to the corresponding figure in brackets after you have mentioned the results. The figures should be inserted into the text as soon as possible after you mention them.

### Discussion

Your discussion section has two fundamental aims:

* to explain the results of your study,
* to explore the significance of your study’s findings.

Therefore you need to:

* interpret and explain your results;
* examine whether and how the questions raised in the introduction section have been answered;
* show how your results relate to the literature;
* qualify and explore the theoretical importance/significance of your results;
* outline any new research questions or areas for future research that your results have suggested.

The discussion is also the place in a manuscript where any qualifications or reservations you have about the research should be aired. Statistically significant results still require analysis and discussion. You might consider questions like the ones below.

* How generally do your results apply?
* How close to real life are the variables you manipulated in a laboratory situation?
* Were their any defects in your experimental design or procedure?
* Were their any confounding factors in your design: could some other factor explain your results?

These are the types of questions you will need to consider in terms of your results in terms of defining the generality and limitations of your results.

The discussion section requires you to use both the past tense and the present tense. The past tense is used when you need to explain particulars about your results.

The present tense is used when you are expanding on the implications of your results or drawing conclusions.

Separating the Results and Discussion sections is one way of organizing this information. It is also possible to combine the Results and Discussion into one section or to include a separate conclusion or general discussion section. It is always advisable to check with your research fellow about these issues.

**Bibliography / Reference list**

It is essential to include a reference list or bibliography of the reference material you consulted during your research for the manuscript. A **bibliography** is a list of all the reference material you consulted during your research for the manuscript while a **reference list** is a list of all the references cited in the text of your manuscript, listed in alphabetical order at the end of the manuscript. Each reference in the reference list needs to contain all of the bibliographic information from a source. You should also check with your research fellow for any Faculty guidelines on referencing formats. A reference list or bibliography should be Romanized, if original title not in English.

Throughout the text of your manuscript you will also need to provide references when you have included an idea in your manuscript which is not your own original idea. You don't need to reference an idea, however, if it is common knowledge (i.e. enzymes are proteins) or if it has been established by you in your experiment (i.e. in scientific manuscripts reporting on an experiment). A reference is the bracketed or footnoted piece of information within the text of your writing that provides an acknowledgment that you are using someone else's ideas. There are several systems of referencing such as the Harvard or author-date system, footnotes or endnotes. Different faculties, departments and even research fellow will generally have preferences about how you should reference and you should seek these out before submitting your assignment.

### The Harvard System of Referencing (Preferred by The Advanced Science Journal):

The Harvard System of referencing incorporates information on:

* the author of the material cited,
* the date of publication
* and where necessary, the page number(s).

This information is placed in a bracket within the sentence of the idea you are discussing. This information allows the reader to look up the full bibliographic information from the attached reference list.

Harvard style references can be given in three ways:

The rationale of the free market is essentially opposed to the collective nature of unionism in the labour market (Ewer, Smith and Keane, 1991, p1).

*\* Notice the reference comes****before****the punctuation ending the sentence, in this case, a full stop.*

**OR**

Ewer, Smith and Keane state that the rationale of the free market is essentially opposed to the collective nature of unionism in the labour market (1991, p1).

**OR**

Ewer, Smith and Keane (1991, p1) state that the rationale of the free market is essentially opposed to the collective nature of unionism in the labour market.

The way you decide to refer will depend upon factors such as the authority of the source and whether you wish to focus on the idea rather than the author.

**When to include page numbers?**

**No Page Numbers:** When you wish to use an author's central idea or argument, for example, you must cite the author's name and the year of publication, but you may leave out page numbers as the original text will have referred to that central idea many times within the text. This will be the case where you summarize the central argument of an entire article.

**Page Numbers:** When you refer to just one idea of many in a publication, however, you must include page numbers. This allows your reader in follow-up reading to find what might be a quite small piece of information inside what could be a large article or book. This is often the case with direct quotations or paraphrased sentences/ paragraphs/ sub-sections of an article.

**Appendices**

Information that is not essential to explain your findings, but that supports your analysis (especially repetitive or lengthy information), validates your conclusions or pursues a related point should be placed in an appendix (plural appendices). Sometimes excerpts from this supporting information (i.e. part of the data set) will be placed in the body of the manuscript but the complete set of information ( i.e. all of the data set) will be included in the appendix. Examples of information that could be included in an appendix include figures/tables/charts/graphs of results, statistics, questionnaires, transcripts of interviews, pictures, lengthy derivations of equations, maps, drawings, letters, specification or data sheets, computer program information.

There is no limit to what can be placed in the appendix providing it is relevant and reference is made to it in the manuscript. The appendix is not a catch net for all the semi-interesting or related information you have gathered through your research for your manuscript: the information included in the appendix must bear directly relate to the research problem or the manuscript's purpose. It must be a useful tool for the reader.

Each separate appendix should be lettered (Appendix A, Appendix B, Appendix B1, Appendix B2, Appendix C, etc). The order they are presented in is dictated by the order they are mentioned in the text of the manuscript. It is essential to refer to each appendix within the text of the manuscript.

Please ,e-mail with questions to editor @advancedscience.org