The anatomy of a research article

Title

Normally the sections of any science report are the following: a title, an abstract, introduction, method(s), results, discussion and references.

The first and one of the most important parts of a science report is a title. Here we propose that you follow our "3 as…as model". It is composed of three components: as **much** as possible, as **specific** as possible, as **few** as possible.

Yes, any title should say as much as possible about the content of the paper. As few words as possible must be used. A title must be as specific as possible.

For example, if you are going to write about the psychological causes of teenage pregnancy, a **good** title is "Psychological causes of teenage pregnancy". A bad title is "A study of thinking".

Why? Let us think: the title "A study of thinking" does not fit in this model 2 times: 1) it says nothing about the content of the paper, 2) it is not specific.

Titles with colons are currently in vogue ("A study of thinking: Psychological causes of teenage pregnancy").

Introduction

In the introduction you must review the most important things for the readers. The review is done in brief. It includes the following items:

- what the problem is;
- what question the authors will try to answer;
- why this problem is important.

Problems to be solved may be basic or newly developed.

In the case of a basic problem the authors must take the following steps:

-state the problem

-review what has already been found out about it.

In the case of a newly developed problem, the one that grows out of past literature, the authors must:

-review the history of how it arose

-substantiate the problem.

Dual importance can be implied. The problem might be important for practical reasons or for theoretical (or methodological) reasons having to do with the development of a scholarly discipline. Neither type of reason should be neglected.

The intro should be clear and present your intentions without any ambiguity.

Terms

Explain all the relevant terms that you will be using during the course of your research. This is usually done in a standard research paper format. It is like providing the background study for your research. It could also be referred to as the developmental context.

The literature review

The literature review should be appropriate to the kind of paper the author is writing.

If it is a thesis, the author should strive for completeness, both in reviewing all the relevant literature and in making the main arguments clear to a reader who is unfamiliar with that literature.

For a course paper or journal article, it is sufficient to review the main papers that are directly relevant. The author should assume that the reader has not read those papers. However, the author need not go into detail. Only those points that are relevant to the arguments the author will make, should be reviewed.

Method

The method section gives the details of how the author went about the project. It is usually divided into the following subsections:

-subjects

-materials

-procedure.

These subheadings are standard ones, but they are not always appropriate, and other subheadings are acceptable. The **point** of subheadings is that the reader may

want to skip this section entirely and return to it later in the paper. The subheadings should make it easy to find relevant details.

Results

Results is a summary of what the author actually found. It should contain whatever summary statistics will help readers see for themselves what happened, such as means and standard deviations of various conditions, and raw correlations, when these are relevant. It should also contain the results of statistical tests. Make sure to do and report just those tests that are relevant to the question that inspired your project. If the author wants to include his raw data (and sometimes there is good reason to do this), he must put them in an appendix.

Visual Aids

Visual Aids. Graphs, charts, and tables are often useful in this section. They should be labeled consecutively either as Figures or Tables, depending on whether a typesetter could be expected to set them, e.g., Figure 1, Figure 2, Table 1, etc. Each one should have a caption explaining clearly what it is, if possible, without relying on anything in the text. The text should tell the reader **when** to look at the figures and tables, and it should highlight the important points, but it should not simply repeat in writing what they say.

Figures and tables are supposed to go at the end of the paper, but this is for the benefit of the typesetter. Most authors prefer the tables and figures close to where they are needed.

Discussion

The discussion must be composed in the following way:

-a summary of the results

-reviewing the original question

-telling the reader what the results have to say about it

-telling the reader what the results do not have to say

-mentioning the possible readers' objections

The discussion section may be combined with the results. However, this approach has both advantages and disadvantages.

The advantage of this is that it puts the results in the context of the issues that generate them.

The disadvantage is that the flow of the discussion gets interrupted with a lot of statistics, etc.

The discussion section is also the place to say anything else you want to say, that does not go anywhere else:
-reflect on the implications of your results, or your methods

-talk about how your project should have been done, and why

-make a more general argument, for which your results are only a part.

References

References is a list of the articles cited. Usually, articles are mentioned in the text by author and date, e.g., Baron (1988), and the references at the end are listed alphabetically by author. Each discipline and each journal has its own conventions about references. These usually insure uniformity. The important thing is that you give the reader what he needs to find the articles you have cited. For journals, both the volume and the year are usually needed as well as the page numbers. If you really want to do it "right" pick a journal and imitate the style.

Footnotes

Sometimes you want to say something that isn't quite necessary. This is the time to use a footnote. If you can get away without using them, it saves the reader's eyes. But sometimes it's hard to resist making rather extensive, but rather tangential remarks. These go in footnotes, not the text. The really eager reader will read them. Others will not.