SEMINÁRIO DE INVESTIGAÇÃO

Escrita Científica

1

ALL scientific writing should follow the **7 C's-rule**, *i.e.* scientific writing should be:

Clear: Unmistakable, not leading to confusion
Correct: Accurate, free from error
    Not prone to interpretation
    Not prone to speculation
Complete: Contain all necessary parts and information to be clearly understood
Concise: to the point, devoid of redundant information and words (avoid verbosity)
Conform to the requirements set by the university (thesis)/journal (journal publication)/employer/… and to the standard conventions and basic principles in:
    Style: units, rules of abbreviations, literature citations etc.
and
    Format: shape, size, general make-up of a publication
Consistent: uniform throughout the text in spelling, structure, style, format, layout, typography, etc.
Common sense prevails!

2

Instituto de Geografia e Ordenamento do Território
UNIVERSIDADE DE LISBOA

Vrije Universiteit Brussel

Universiteit Antwerpen

Guidelines to Scientific Writing

ecoMama ecological MARINE MANAGEMENT

By

Dr. ir. Mony Jaspers

Mss. Griet Neukermans

June 2007

With input by Paul Nieuwenhuysen
2007-07

3

Instituto de Geografia e Ordenamento do Território
UNIVERSIDADE DE LISBOA

11 steps to structuring a science paper editors will take seriously

www.elsevier.com/connect/11-steps-to-structuring-a-science-paper-editors-will-take-seriously

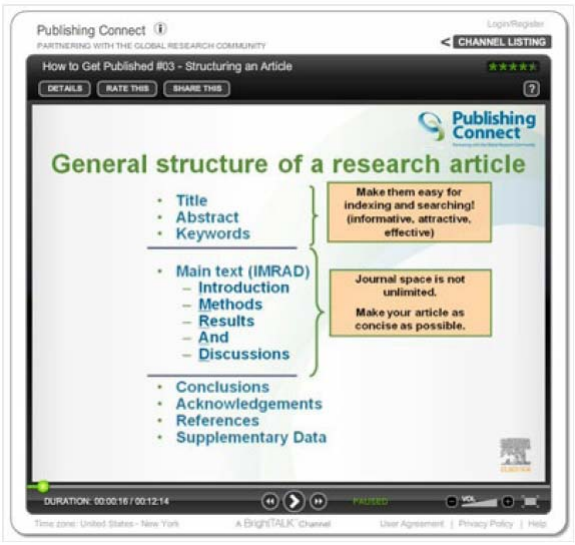
A seasoned editor gives advice to get your work published in an international journal

By Angel Borja, PhD Posted on 24 June 2014

Share story:

How to Prepare a Manuscript for International Journals — Part 2

4



5

An article begins with the Title, Abstract and Keywords.

The article text follows the IMRAD format, which responds to the questions below:

- Introduction: What did you/others do? Why did you do it?
- Methods: How did you do it?
- Results: What did you find?
- And
- Discussion: What does it all mean?

The main text is followed by the Conclusion, Acknowledgements, References and Supporting Materials.

6

Length of the manuscript

Again, look at the journal's Guide for Authors, but an ideal length for a manuscript is 25 to 40 pages, double spaced, including essential data only. Here are some general guidelines:

- **Title:** Short and informative
- **Abstract:** 1 paragraph (<250 words)
- **Introduction:** 1.5-2 pages
- **Methods:** 2-3 pages
- **Results:** 6-8 pages
- **Discussion:** 4-6 pages
- **Conclusion:** 1 paragraph
- **Figures:** 6-8 (one per page)
- **Tables:** 1-3 (one per page)
- **References:** 20-50 papers (2-4 pages)

7

- The topic to be studied should be the first issue to be solved. Define your hypothesis and objectives (These will go in the Introduction.)
- Review the literature related to the topic and select some papers (about 30) that can be cited in your paper (These will be listed in the References.)

8

Step 1: Prepare the figures and tables

Remember that "a figure is worth a thousand words." Hence, illustrations, including figures and tables, are the most efficient way to present your results. Your data are the driving force of the paper, so your illustrations are critical!

Step 2: Write the Methods

This section responds to the question of how the problem was studied. If your paper is proposing a new method, you need to include detailed information so a knowledgeable reader can reproduce the experiment.

However, do not repeat the details of established methods; use References and Supporting Materials to indicate the previously published procedures. Broad summaries or key references are sufficient.

9

Step 3: Write up the Results

This section responds to the question "What have you found?" Hence, only representative results from your research should be presented. The results should be essential for discussion.

Step 4: Write the Discussion

Here you must respond to what the results mean. Probably it is the easiest section to write, but the hardest section to get right. This is because it is the most important section of your article. Here you get the chance to sell your data. Take into account that a huge numbers of manuscripts are rejected because the Discussion is weak.

You need to make the Discussion corresponding to the Results, but do not reiterate the results. Here you need to compare the published results by your colleagues with yours (using some of the references included in the Introduction). Never ignore work in disagreement with yours, in turn, you must confront it and convince the reader that you are correct or better.

10

Take into account the following tips:

1. Avoid statements that go beyond what the results can support.

2. Avoid unspecific expressions such as "higher temperature", "at a lower rate", "highly significant". Quantitative descriptions are always preferred (35ºC, 0.5%, $p<0.001$, respectively).

3. Avoid sudden introduction of new terms or ideas; you must present everything in the introduction, to be confronted with your results here.

4. Speculations on possible interpretations are allowed, but these should be rooted in fact, rather than imagination. To achieve good interpretations think about:

11

- How do these results relate to the original question or objectives outlined in the Introduction section?
- Do the data support your hypothesis?
- Are your results consistent with what other investigators have reported?
- Discuss weaknesses and discrepancies. If your results were unexpected, try to explain why
- Is there another way to interpret your results?
- What further research would be necessary to answer the questions raised by your results?
- Explain what is new without exaggerating

5. Revision of Results and Discussion is not just paper work. You may do further experiments, derivations, or simulations. Sometimes you cannot clarify your idea in words because some critical items have not been studied substantially.[divider]

12

Step 5: Write a clear Conclusion

This section shows how the work advances the field from the present state of knowledge. In some journals, it's a separate section; in others, it's the last paragraph of the Discussion section. Whatever the case, without a clear conclusion section, reviewers and readers will find it difficult to judge your work and whether it merits publication in the journal.

A common error in this section is repeating the abstract, or just listing experimental results. Trivial statements of your results are unacceptable in this section.

You should provide a clear scientific justification for your work in this section, and indicate uses and extensions if appropriate. Moreover, you can suggest future experiments and point out those that are underway.

You can propose present global and specific conclusions, in relation to the objectives included in the introduction.[divider]

13

Step 6: Write a compelling Introduction

This is your opportunity to convince readers that you clearly know why your work is useful.

A good introduction should answer the following questions:

- What is the problem to be solved?
- Are there any existing solutions?
- Which is the best?
- What is its main limitation?
- What do you hope to achieve?

Editors like to see that you have provided a perspective consistent with the nature of the journal. You need to introduce the main scientific publications on which your work is based, citing a couple of original and important works, including recent review articles.

14

Step 7: Write the Abstract

The abstract tells prospective readers what you did and what the important findings in your research were. Together with the title, it's the advertisement of your article. Make it interesting and easily understood without reading the whole article. Avoid using jargon, uncommon abbreviations and references.

You must be accurate, using the words that convey the precise meaning of your research. The abstract provides a short description of the perspective and purpose of your paper. It gives key results but minimizes experimental details. It is very important to remind that the abstract offers a short description of the interpretation/conclusion in the last sentence.

A clear abstract will strongly influence whether or not your work is further considered.

15

Step 8: Compose a concise and descriptive title

The title must explain what the paper is broadly about. It is your first (and probably only) opportunity to attract the reader's attention. In this way, remember that the first readers are the Editor and the referees. Also, readers are the potential authors who will cite your article, so the first impression is powerful!

We are all flooded by publications, and readers don't have time to read all scientific production. They must be selective, and this selection often comes from the title.

16

Step 9: Select keywords for indexing

Keywords are used for indexing your paper. They are the label of your manuscript. It is true that now they are less used by journals because you can search the whole text. However, when looking for keywords, avoid words with a broad meaning and words already included in the title.

Step 10: Write the Acknowledgements

Here, you can thank people who have contributed to the manuscript but not to the extent where that would justify authorship. For example, here you can include technical help and assistance with writing and proofreading. Probably, the most important thing is to thank your funding agency or the agency giving you a grant or fellowship.

In the case of European projects, do not forget to include the grant number or reference. Also, some institutes include the number of publications of the organization, e.g., "This is publication number 657 from AZTI-Tecnalia."[divider]

17

Step 11: Write up the References

Typically, there are more mistakes in the references than in any other part of the manuscript. It is one of the most annoying problems, and causes great headaches among editors. Now, it is easier since to avoid these problem, because there are many available tools.

In the text, you must cite all the scientific publications on which your work is based. But do not over-inflate the manuscript with too many references – it doesn't make a better manuscript! Avoid excessive self-citations and excessive citations of publications from the same region.

18