# Quality Criteria for Writing and Reviewing Papers

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## Preface

This is a short (and somehow preliminary) guideline for writing good papers and for assessing the quality of a paper when reviewing it.

## 1 Research Papers

### 1.1 Structure and content of the paper

The structure and content of a good research paper is characterized as follows.

- The introduction
  - presents the background and the context of the contribution
  - gives the motivation, i.e. makes clear why and where existing results/approaches/techniques are are unsatisfactory (incomplete, unapplicable in some relevant situation, too narrow, too unspecific, flawed...)
  - summarizes results and insight in a few sentences
  - gives an overview of the structure of the paper
- The main sections
  - present the new approaches, techniques, processes, tools, solutions and results as appropriate
  - give rationale for the key elements and decisions
  - are structured towards readability and not according to the way that the authors went when developing and deriving their results
- The conclusion
  - evaluates and discusses the results
  - reports both positive and negative results
  - discusses limitations, scalability and the range of applicability
  - refers to related work by others and discusses it (if such work exists and if it has not been discussed in the introduction)
  - summarizes the state of work and sketches future work (if applicable)
- The references
  - list all publications that have been referenced in the paper
  - are complete and consistent in style

## 1.2 Evaluation and presentation of results

A good research paper must present convincing evidence that the research reported in the paper is relevant, i.e. that there are significant new results.

Ideally, results are evaluated quantitatively. Authors who do not (or not yet) have quantitative results, should give at least a qualitative discussion of results.

# 2 Experience Reports

## 2.1 Structure and content of report

The structure and content of a good experience report is characterized as follows.
- The introduction
  - presents the background and the context of the contribution
  - makes clear which roles the authors of the contribution play in the work that is being reported
  - summarizes results and insight in a few sentences
  - gives an overview of the structure of the paper
- The main sections
  - of a "classic" experience report describe the approach and its results in terms of the methods, techniques, languages, tools, processes, prerequisites, problems, and people involved, as appropriate
  - of a case study describe a product and give rationale for the key decisions shaping the product
- The conclusion
  - evaluates the results and derives experience and insight that is valuable for the intended audience of the paper
  - reports both positive and negative observations (nothing is perfect!)
  - discusses limitations and the range of applicability
  - refers to related experience by others and discusses it (if such experience exists and if this has not been discussed in the introduction)
  - summarizes the state of work and sketches future work (if applicable)
- The references
  - list all publications that have been referenced in the paper
  - are complete and consistent in style

## 2.2 Evaluation and presentation of results

Frequently, authors of experience reports fail to present background, motivation, and evaluation of results; describing only the practical application of a method, process or language. Such a "how we did it" report has no value for most readers because they can't derive any insight or directions for their own work from it. Avoid this FMM (frequently made mistake).

Experience reports should provide lessons that can be drawn from what you did. However, reporting only positive experience is another FMM. An experience report is no sales brochure, so include all interesting observations, whether positive, negative or inconclusive.

Ideally, results are evaluated quantitatively. If you do not have quantitative results, give at least a qualitative discussion of results. For example, if you report on the application of process xxx, tell the audience what different stakeholders in the process think about the success/failure of xxx and what they expected, give your (the authors') observations and insights and compare them with those of the stakeholders, etc.

# 3 Avoiding frequently made mistakes

- Avoid multi-message papers. A good paper is an elaboration of a core message which can be stated in a few sentences.
- Always write with your intended audience in mind.
- Report results, not the process how you found them.
- Report both positive and negative results, a paper is no sales pitch.
- Do not write papers that add just a small delta to a previous paper.
- Do not rehash ideas that have already been published elsewhere (no matter whether the previous papers were written by you or by others).
- Avoid "how we did it" reports.