

The Rhetoric of the Methods Section in a Research Article

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The methods section in a research article should describe the experimental design so that the reader understands that your approach is well suited to answer the research question posed in the introduction.

Methods sections tend to sanitize the real, messy work of research science. In this respect, the methods section is a fiction, an idealized version that ignores missteps and dead-ends. Unlike a classroom lab report, this section only recounts what led to the results used in the paper. Do not refer to dead ends or mistakes unless they produced insights important to other researchers or to the final results. Your goal is to enable readers to evaluate your methodology, replicate the experiment, and appreciate the elegance of your research design.

A methods section is similar to a laboratory report in its writing style: it documents what was done in a descriptive style. Also provide a rationale, if necessary, on why you proceeded as you did. Although the writing style itself is descriptive, the effect is persuasive in that this section creates an argument about the credibility of your work. Methods sections can help establish your credentials as a seasoned working scientist. They can go a long way in establishing your ethos (character). This section should demonstrate that you are a member of the research community: you know the moves, you are familiar with standard procedures.

Common Elements

The methods section should include some of the following elements, as applicable to the particulars of your project:

- Where and what was done
- Narrative of step-by-step activities (in chronological or procedural order)
- Initial conditions
- Data collection details: where, when, why and how were data collected (or source of data)
- Details on how data were used
- Description/definition of units of measure
- Tables/figures to list data sets (not results)
- Description of instruments used to take measurements
- Diagrams of instruments
- Description of analysis or process used
- Reasons why your method is appropriate; reasons why you depart from usual methods
- Description of model(s) used, with names and references
- Equations

Don't belabor the obvious: only brief descriptions are necessary for standard procedures or approaches that are conventional or widely accepted.