



HOW TO WRITE THE METHODS SECTION?

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method

- This section has several different names including: ‘Methods’, ‘Methods and Materials’, ‘Experimental’, ‘Method Description and Validation’.
- In most journals the Methods section follows the Literature Review, in others it follows the Conclusions.
- your experiments and/or the methods you used to carry out your research, in a way that is sufficiently detailed to enable others in your field to easily follow your method and, if desired, even replicate your work.

method

- · What / Who did I study? What hypotheses was I testing?
- · Where did I carry out this study and what characteristics did this location have?
- · How did I design my experiment / sampling and what assumptions did I make?
- · What variable was I measuring and why?
- · How did I handle / house / treat my materials / subjects? What kind of care / precautions were taken?
- · What equipment did I use (plus modifications) and where did this equipment come from (vendor source)?
- · What protocol did I use for collecting my data?
- · How did I analyze the data? Statistical procedures? Mathematical equations? Software?
- · What probability did I use to decide significance?
- · What references to the literature could I give to save me having to describe something in detail?
- · What difficulties did I encounter? · How does my methodology compare

How should I begin the Methods?

- Typical ways include:
 - (a) making a general statement about your method
 - The method described here is simple, rapid, sensitive and ...
 - (b) referring to another paper
 - The materials used for isolation and culture *are described* elsewhere [20].
 - Materials *were obtained* in accordance with Burgess et al.'s method [55].
 - (c) stating where you obtained your materials from
 - Bacterial strains ... *were isolated* and kindly supplied by ...
 - Agorose for gel electrophoresis *was purchased* from Brogdon plc (Altrincham, UK).
 - (d) explaining how you found your subjects, i.e. begin with the setting
 - Subjects *were chosen* from a randomly selected sample of ...
 - Participants *were selected* from patients at the Gynecology Faculty of the University of ...

How should I begin the Methods?

- (e) indicating where (i.e. a geographical region) your investigation was focused
- Our empirical investigation focused on Tuscany, a central region of Italy, ...
- The study *was carried out* in four boulevards in Athens (Greece) and ...
- (f) referring the reader to a figure which shows the experimental set up
- To highlight the advantages of the system, Fig. 1 shows the ...
- (g) starting directly with the first step in your procedure
- Frontal cerebral cortices *were dissected* from ...
- Core-cell composite materials *were prepared* by colloidal assembly of ...

What tense should I use? Should I use the active or passive?

Most Methods sections are written in the past simple using the passive form.

- The past simple is required because the actions you describe took place in the past (i.e. before you started to write your paper). The past simple also helps to distinguish what you did from what others have done (which is often described in the present simple).
- The passive is good style here because the focus is on what was done rather than who did it. Thus you can ignore any expert advice that tells you that the passive should always be avoided. It should be avoided, but only where it is not necessary. In the Methods the passive is both necessary and appropriate.

How many actions in a sentence?

- You can use bullets.
- How Can I reduce word count?
- By two actions report.
 - · assume your readers have basic knowledge of the techniques used in your field, you can delete any superfluous information cite a reference rather than detailing the procedure again if any of your methods are fully
 - described elsewhere (in one of your papers or someone else's)
 - use tables and figures to summarize information
 - be concise

Let's Write

- Describing previously used methods
- To date various methods have been developed and introduced to measure X:
- In most recent studies, X has been measured in four different ways.
- Traditionally, X has been assessed by measuring....
- Different authors have measured X in a variety of ways.
- This test is widely available, and has been used in many investigational studies.
- Case studies have been long established in X to present detailed analysis of
- Recently, simpler and more rapid tests of X have been developed.
- Radiographic techniques are the main non-invasive method used to determine

Let's Write

- Giving reasons why a particular method was adopted or rejected
- A case study approach was used to allow a
- Qualitative methods offer an effective way of
- A quantitative approach was employed since
- The X method is one of the more practical ways of
- The semi-structured approach was chosen because
- The X approach has a number of attractive features:
- The second advantage of using the multivariate method is

Let's Write

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Let's Write

- Indicating a specific method
- X was prepared according to the procedure used by Patel *et al.* (1957).
- The synthesis of X was done according to the procedure of Smith (1973).
- X was synthesised
- This compound was prepared by adapting the procedure used by Zhao *et al.* (1990).
- An alternative method for making scales homogenous is by using
- Samples were analysed for X as previously reported by Smith *et al.* (2012) using the same method that was detailed for Y, using

Let's Write

- Describing the characteristics of the sample
- Eligibility criteria required individuals to have received
- A random sample of patients with was recruited from
- Forty-seven students studying X were recruited for this study.
- Just over half the sample (53%) was female, of whom 69% were
- Of the initial cohort of 123 students, 66 were female and 57 male.
- Only children aged between 10 and 15 years were included in the study.
- Eligible women who matched the selection criteria were identified by
- The students were divided into two groups based on their performance on

Let's Write

- Indicating reasons for sample characteristics
- Criteria for selecting the subjects were as follows:
 - The area of study was chosen for its relatively small
 - Five individuals were excluded from the study on the basis of
 - A small sample was chosen because of the expected difficulty of obtaining
 - The subjects were selected on the basis of a degree of homogeneity of their

Let's Write

- Describing the process: infinitive of purpose
- In order to identify the T10 and T11 spinous processes, the subjects were asked to
- In order to understand how X regulates Y, a series of transfections was performed.
- To establish whether,
- To measure X, a question asking was used.
- To see if the two methods gave the same measurement, the data was plotted and
- To control for bias, measurements were carried out by another person.
- To rule out the possibility that X, the participants were
- To determine whether, the cells were incubated for
- To enable the subjects to see the computer screen clearly, the laptop was configured with

Let's Write

- Describing the process: other phrases expressing purpose
- For the purpose of height measurement, subjects were asked to stand
- For the purpose of analysis, 2 segments were extracted from each
- For the estimation of protein concentration, 100 μL of protein sample was mixed with

Let's Write

- Describing the process: using + instrument
- 15 subjects were recruited using email advertisements requesting healthy students from
- All the work on the computer was carried out using Quattro Pro for Windows and
- Data were collected using two high spectral resolution Xs.
- The data was recorded on a digital audio recorder and transcribed using a

Let's Write

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