Methods

The Methods section describes how your study was conducted: it identifies the participants, defines variables, and describes the process of your experiments, tests, and surveys. Clarity and thoroughness in describing your methods is necessary for readers to judge the reliability of your results. In addition, a clear methods section helps other researchers to replicate your experiments for future study.

A Quick Word on Section Headings

The Methods section will likely be long enough to warrant the use of subsection, which will help you to better organize this part of the paper for your own sake as well as for the readers’.

Second-level Headings

Unlike main section headings, which are bold and center-aligned, second-level section headings will be bold and flush-left, with each word (excluding conjunctions, articles, and prepositions) capitalized.

Third-level headings. Additionally, headings of sections within subsections will be bold, indented, and on the same line as the first sentence of that section. Notice that only the first word of a third-level heading is capitalized.

Writing the Methods Section

Participants

This subsection describes exactly who took part in your study, including demographics and sample size. This information allows future researchers compare information about their participants with yours. Questions you will need to answer in this section include

- Who participated in your study? Include all information relevant to your research, including but not limited to age, sex, ethnic background, education level, socioeconomic status, etc.
- How did you select your participants? From where did you recruit them? Of the total number of participants you recruited, how many agreed to partake in the study?
- How large is your sample size? Large enough to “detect effects of substantive interest” (Publication Manual of the APA, 2010, p. 30)? Be sure to provide evidence for this.
- Did your participants receive anything in return for taking part in your research (i.e. financial compensation, extra credit)? Did you require any of your participants (or legal guardians if the participants are minors) to sign consent forms?
- Did you file a form with the institutional review board to ensure that you will treat your participants ethically (completing an IRB form is required when working with living subjects)?

Apparatuses/Materials

This section will identify and describe the tools you used to collect your data. It should be noted here the apparatuses and materials are not interchangeable.

Apparatuses. An apparatus refers to equipment used during data collection, such as a computer or heart monitor, to name a few. In other words, an apparatus is a tool used to measure data that the participants does not directly manipulate. Be specific about the brand name, model number, and date of manufacture when describing an apparatus.

Materials. Materials refer to anything that is distributed to your participants, such as surveys, tests, images, videos, etc. Unlike apparatuses, materials can be directly interacted with by your participants, whether by completing a form or interpreting information that you present them with.
In the research paper, be sure to include copies of whatever materials you gave to your participants. Perhaps the best place for this information is in the Appendix at the end. This way, the materials will not intrude in the body of the paper and you can easily refer your reader to them (you could say, for instance, see Appendix A).

**Procedure**

The procedure is a chronologically-ordered report of the steps you took to collect your data. This section must be detailed so that other researchers will be able to accurately replicate your experiment.

**Research design.** Describe the type of study you are conducting, which has an effect on how you will collect and interpret your data.

- Is your research design quantitative (focused on gathering numerical data using apparatuses) or qualitative (focused on interpreting verbal or visual data from surveys, interviewees, texts)?
- Did you place your subjects in a controlled condition where they were manipulated or were they observed naturally, allowed to go about their daily activities as normal?
- If multiple conditions were used, how did you assign participants to these conditions: randomly or non-randomly?
- Was the research design within-subjects (different groups or individuals are assigned different independent variables) or between-subjects (all groups and individuals are assigned the same independent variable)?

**Definition of variables.** Define both dependent and independent variables in your study.

Dependent variables refer to the variable that is being tested and measured in an experiment. In other words, it is “dependent” on the independent variable.

Independent variables refer to variables that are manipulated by the researcher. In other words, the researcher hypothesizes that manipulating the independent variable will influence the dependent variable in some way.

If, for example, let’s say you are trying to determine how much sleep is ideal for a student to get the night before a quiz. The number of hours of a student sleeps is the independent variable, while the same student’s performance on the quiz the next day is the dependent variable.

**Setting and timeframe.** Where did you conduct your study (e.g. classroom, clinical/professional setting)? How long did the study last (e.g. a few hours, several months)? Based on your research, other factors, such as time of day, may important: include such details as necessary.

**Experimental manipulations or interventions.** Describe here any direct interaction on your part in the study. This may include instructions or training that you gave to participants. If someone else intervenes, either with an apparatus or materials, be sure to describe their level of professional training and expertise with whatever tools they use.

**Summary.** Describe in chronological order everything your participants during the study, including which forms they signed and which tests they performed. Keep in mind that you are dealing with the results of the study just yet; in other words, this section is purely summary, so no discussion or analysis until the next major section of the paper: the Results section.

**Reference**