The “Materials and Methods” section consists of the specific steps that were taken to produce your research. If someone else wanted to duplicate your experiment, they could learn how to do so in this section. This handout will give you the tools you need to create a clear “Materials and Methods” section.

**Purpose**

The “Materials and Methods” section provides enough information so that other researchers can evaluate your experiments and, if necessary, replicate them. Disciplines in the social sciences often include the rationale for the chosen methodology. Since, the actions rather than the actor are most important, passive voice is usually preferred.

*Note:* For more information on when and how to use the passive voice, please see our “Voice” handout.

**Elements**

**Introduction**

Write a brief introduction to help the reader navigate the section and understand how the experiments or procedures connect to your research questions and hypotheses.

**Experimental Approach and Design**

Describe your experimental approach, making sure to state your independent and dependent variables. Indicate why your selected approach was the most useful way to determine the relationship between the variables.

**Pilot Study**

If you are using an instrument that you designed, include details about the pilot study you conducted to ensure its validity and/or reliability.

**Participants or Subjects**

Describe the participants or subjects you studied and discuss the criteria used to select them and to determine the sample size.

In addition to reporting the number of participants or subjects in your study, be sure to include relevant characteristics or demographic data. While you could describe any number of details about those who participated, include only those characteristics that relate to your research.
Materials and Instruments
Describe your materials and instruments and provide your justification for their use. Often information about specific materials or tools (such as the manufacturer’s name) is included in parentheses.

Detail the instrument’s purpose, response format, and scoring. In addition to giving the name and associated acronym of instruments, provide the authors’ names and the key reference source for the instrument.

Be sure to describe the validity and reliability of each instrument used. If an instrument you utilized is found to be invalid, then your findings may be invalid too.

Procedure or Data Collection
This section provides detailed, step-by-step instructions of what you physically did to conduct the experiment or collect the data from your participants. In addition, you should justify the experimental design and approach.

Divide this section into procedures or protocols, and then describe actions chronologically. Include what specific steps you used before, during, and after the data were collected. Remember, this section should be written so that another researcher could duplicate your experiment.

Data Analysis
Describe the statistical tests you used on the data. Connect these techniques to your research questions, explaining how the analysis will answer them.

If the type of analysis is common, then a description of it is unnecessary. However, if you use a method of analysis that is unusual, then you must include a reference, a formula, a description of the technique, and the rationale for its use.

Ethical Guidelines
Be sure to describe the ethical guidelines you followed and any institutional approval you received, especially if you are using human participants or animal subjects.

Summary
End with a condensed summary that prepares your reader for your “Results” section.

Note: For more information on how to write a “Results” section, please see our handout on this topic.

References