

### Components of a Experimental Method Plan

1. *Subjects*
  - a. Describe whether subjects were selected randomly or conveniently
  - b. Indicate whether the subjects will be assigned randomly to groups in the experiment
  - c. Indicate whether subjects will be matched, and randomly assigned to treatment groups
  - d. Tell reader about number of subjects in each group and procedure for determining size of each group (e.g., using power tables, or from existing research rationale)
2. *Variables*
  - a. Identify independent variable (treatment conditions or factors)
    - i. Biological events (e.g., food deprivation)
    - ii. Social environment (e.g., sociocultural pressures and demographics)
    - iii. Hereditary factors (e.g., health problems)
    - iv. Previous training and experience
    - v. Maturation (e.g., age of subjects, level of maturity)
    - vi. Manipulated condition
    - vii. Demographic characteristics (non-manipulated condition)
  - b. Identify the dependent variable
3. *Instrumentation and Materials*
  - a. Describe the instrument used (are there established validity and reliability?)
  - b. Discuss thoroughly the materials used to create the treatment conditions
4. *The Experimental Design*
  - a. Discuss the overall type of design (preexperimental, quasi-experimental, single-subject, or pure (true) experiment)
  - b. Other distinctions can be made about overall design (e.g., between-subject designs, within-subject design, or repeated measures) and how to handle order effects
  - c. Provide diagram or figure to illustrate the specific research design to be used:  
E.g., True Experiment: Posttest-only control group design  
Group A R ----- O ----- X ----- O  
Group B R ----- O -----  
Where R indicates random assignment  
X represents an exposure of a group to an experimental variable or event  
O represents an observation or measurement
5. *Procedure*
  - a. Discuss step-by-step approach for procedure in the experiment
  - b. E.g., pretest-posttest control group design with matching:
    - i. Administer to research subjects measures of dependent variable
    - ii. Assign subjects to matched pairs on basis of scores in Step 1
    - iii. Randomly assign one member of each pair to experimental group or control group
    - iv. Expose experimental group to experimental treatment and administer no treatment or alternative treatment to control group
    - v. Administer measures of dependent variables to experimental and control groups
    - vi. Compare the performance of experimental and control group on posttest
6. *Statistical Analysis*
  - a. Describe descriptive statistics at pretest or posttest stages of experimental design
  - b. Describe inferential statistics used to test the hypotheses in the study
  - c. For single-subject research designs, use line graphs for baseline and treatment observations for x-axis (abscissa) units of time and the y-axis (ordinate) target behavior

Adapted from:  
Creswell, J.W. (1994). *Research Design: Qualitative & Quantitative Approaches*. Thousands Oaks, CA: Sage Publications.

***Checklist of Questions for Designing a Survey Method***

- \_\_\_\_\_ Who are the subjects in the study? To what populations do these subjects belong?
- \_\_\_\_\_ How were the subjects selected? Was random selection method used?
- \_\_\_\_\_ How will subjects be randomly assigned? Will they be matched? How?
- \_\_\_\_\_ How many subjects will be in the experimental and control group(s)?
- \_\_\_\_\_ What is the dependent variable(s) in the study? How will it be measured? How many times will it be measured?
- \_\_\_\_\_ What is the treatment condition(s)? How was it operationalized?
- \_\_\_\_\_ Will variables be covaried in the experiment? How will they be measured?
- \_\_\_\_\_ What experimental research design will be used? What would a visual model of this design look like?
- \_\_\_\_\_ What instrument(s) will be used to measure the outcome in the study? Why was it chosen? Who developed it? Does it have established validity and reliability? Has permission been sought to use it? Has the author requested a fee for use of the instrument?
- \_\_\_\_\_ What are the steps in the procedure?
- \_\_\_\_\_ What are potential threats to internal and external validity for the experimental design and procedure? How will they be addressed?
- \_\_\_\_\_ Will a pilot test be conducted?
- \_\_\_\_\_ What statistics will be used to analyze the data (e.g., descriptive and multivariate)?