RESEARCH PROJECT IDEAS
CHAPTER 10

1. Read and study the following experimental research designs. For each:
   a. Identify and provide a label for the independent and dependent variables.
   b. Indicate the number of levels in the independent variable, and provide a label for each level.
   c. Indicate whether the research used a between-participants or a within participants research design.

- The researchers are interested in the effectiveness of a particular treatment for insomnia. Fifty adult insomnia sufferers are contacted from a newspaper ad, and each is given a pill with instructions to take it before going to sleep that night. The pill actually contains milk powder (a placebo). The participants are randomly assigned to receive one of two instructions about the pill: One half are told that the pill will make them feel “sleepy,” and the other half are told that the pill will make them feel “awake and alert.” The next day the patients return to the lab and are asked to indicate how long it took them to fall asleep the previous night after taking the pill. The individuals who were told the pill would make them feel alert report having fallen asleep significantly faster than the patients who were told the pill would make them feel sleepy.

- An experimenter wishes to examine the effects of massed versus distributed practice on the learning of nonsense syllables. He uses three randomly assigned conditions of college students. Group 1 practices a twenty nonsense-syllable list for ninety minutes on one day. Group 2 practices the same list for forty-five minutes per day for two successive days. Group 3 practices the same list for thirty minutes per day for three successive days. The experimenter assesses each condition’s performance with a free recall test after each condition completes the designated number of sessions. The mean recall of the twenty syllables for condition 1 is 5.2; for condition 2, 10.0; and for condition 3, 14.6. These means are significantly different from one another, and the experimenter concludes that distributed practice is superior to massed practice.

- Saywitz and Snyder (1996) studied whether practice would help second-through sixth-grade children recall more accurately events that happened to them. During one of their art classes, a person entered the classroom and accused the teacher of stealing the markers that the children were using. The intruder and the teacher argued at first, but then developed a plan to share the markers. Two weeks after the incident, the children were asked to recall as much as they could about the event. Before they did so, the children were separated into three groups. One was given
instructions, such as noting who were the people involved and what each said and did, to help recall what happened. The second group was given both instructions and practice in recalling the event, while the third group was given no specific instructions at all. The results showed that the instructions-plus-practice group was able to recall significantly more information about the original incident than either of the other groups.

- Ratcliff and McKoon (1996) studied how having previously seen an image of an object may influence one’s ability to name it again when it reappears later. Participants were first shown pictures of common objects—a purse, a loaf of bread, etc.—on a computer screen. The participants then left and returned one week later. At this time, they were shown some of the original pictures they had seen in the first session, some similar but not identical images, and some entirely new ones, and then were asked to name the objects as quickly as possible. The researchers found that the original objects were named significantly faster than the new objects, but that the similar objects were named more slowly than the new ones.

2. Design a one-way experiment to test each of the following research hypotheses:
   a. The more a person tries not to think of something, the more he or she will actually end up thinking about it.
   b. People are more helpful when they are in a good mood than when they are in a bad mood.
   c. Consumption of caffeine makes people better at solving mathematics problems.
   d. People learn faster before they eat a big meal than after they eat a big meal.

3. Perform the following test to determine the effectiveness of random assignment to conditions. Use random assignment to divide your class into two halves. Then calculate the mean of the two halves on (a) the following three variables and (b) three other variables of your own choice.
   - Number of sporting events attended last year
   - Number of different restaurants eaten at in the past month
   - Number of hours of study per week

Compare the means of the two halves using a one-way ANOVA. Was random assignment to conditions successful in creating equivalence?