

Questions similar to those below may appear in the short answer part of the exam. Answers are at the end. Going over Babbie carefully will probably help with any points you are unclear on.

**Short Answer Sample Problems for Experimentation:** The chairman of the Sociology Department wants to do everything he can to improve the department. He plans to conduct several experiments to see what will help the department most.

For parts (a) through (c), help the chair to clarify his thinking by telling him what type of experimental design he is employing. You can use R-X-O notation or the formal name for the design.

a. The chair believes that Notre Dame football could be a powerful lure to potential graduate students. He will gather information on the GRE scores of graduate students currently enrolled in the Sociology and Government departments. Then, starting next year, potential graduate students in Sociology (but not Government) will be offered free season football tickets if they come to school here. Next academic year, the Chair will compare the GRE scores of the new students in both departments.

b. The chair suspects that personal contact from him will encourage top scholars to apply for jobs here. The names of 50 potential faculty members will be tossed into a hat. Half will receive a personal call from the chair, while the other half will only receive a form letter encouraging them to apply. After the deadline for applications has passed, the chair will count up the number of people from each group that has sent in applications.

c. The chair will be having a series of individual talks with University officials. He wants to know whether his meetings with them do more harm than good. Before each meeting, he will toss a coin. If the coin comes up heads, he will first ask the official what he thinks of the department, and then give his presentation. If the coin comes up tails, he will first give his presentation, and then ask the official what he thinks of the department.

For parts (d) through (f), tell the Chair what the chief threat to internal validity is in each of his experiments, and briefly explain why.

d. The chair believes that attendance at faculty meetings helps to make people into better and more productive scholars. He will therefore compare the productivity of those who regularly attend faculty meetings with those who don't. Impartial observers who know nothing about attendance at faculty meetings will evaluate productivity.

e. The chair has found that he can pay an outside lecturer a lot less than he pays a graduate student to teach a class. He would therefore like to fund fewer graduate students and hire more lecturers. But, the administration will not let him do this unless he can show that outside lecturers do just as good a job of teaching. Therefore, 10 classes will be randomly divided between graduate students and outside lecturers. If, at the end of the semester, the teaching evaluations of the outsiders are as good as those of the graduate students, the administration will let him do whatever he wants with regards to hiring outsiders and funding students. (NOTE: students in the classes will do the evaluations; hence you can be sure that the assessments will be fair and impartial.)

f. The chair believes that, thanks to his solid leadership, the department will be allocated much greater resources than it has in the past. He will gather information on money spent on the department for each of the four years prior to his taking office and each of the four years after he takes office.

## Experimentation answers

- a.  X

Note that the groups are not equivalent.

- b. R X   
R

- c. R  (X)  
R  X

Note that both groups receive the treatment; but some are pretested while others are post-tested.

- d. Selection - It may be that those who attend faculty meetings are better scholars to begin with, and would continue to be better scholars even if they did not go. Instrumentation does not seem to be a threat, since evaluations are done by impartial observers who know nothing about attendance at meetings.
- e. Compensatory rivalry or resentful demoralization - knowing that their jobs are on the line, the graduate students may work harder or else give up. Instrumentation does not seem a problem, since the evaluations are fair and impartial. Diffusion of treatments does not seem likely, as different classes may be being taught - and even if there were two sections of the same course, how many of you are bothering to check what is going on in the other Soc 30902 section???
- f. History - this is a time series design. Other historical events that coincided with the choice of a new chair may be responsible for the changes in funding.