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| **Chapter 10:** Observational Studies and Experiments (pages 257 – 278) |

**OBJECTIVES:**

* Know the differences between an observational study, a sample survey, and an experiment. (These methods collect data in different ways and lead us to different conclusions.)
* Know that only well-designed experiments can let us reach cause-and-effect conclusions.
* Manipulate levels of treatment in an experiment to see if a factor that is being investigated produces differences in our response variable.
* Know and apply the principles of experimental design: control, randomize, and replicate.
* Establish the value of having a control group and of using blinding and placebo controls.
* Recognize the problems posed by the confounding variables in experiments and the lurking variables in obsevational studies.
* Design an observational study.
* Design an experiment.

**Vocabulary*:*** *observational studies, retrospective study, prospective study, experiment, random assignment, response variable, subjects or participants, experimental units, levels, treatment, control, randomize, replicate, The 3 Principles of Experimental Design*

**MONDAY, 2.3.25**

**Review the following:** *retrospective study, prospective study, experiment.*

**Discuss the vocabulary and concepts of pages 257 – 263.**

**Previous Homework Inspection:** #6 – 8 on page 280.

**Class Work/ Homework**:

* #10 and 11 on page 280.
* **Define** *statistically significant*.
* What is the difference betweenan *experiment*and a *sample survey*?

**WEDNESDAY, 2.5.25**

**Previous Homework Inspection:** page 280 (#10, 11).

**Discuss the previously assigned work.**

* **Define** *statistically significant*.
* What is the difference betweenan *experiment*and a *sample survey*?
* **Comment on the following (pages 264 – 278):**

1. Control group
2. Blinding
3. Single-blind
4. Double-blind
5. Placebo
6. Placebo effect
7. The 4 characteristics of the best experiments
8. Blocking
9. Confounding

**Class Work/Homework:**

* Summarize the information on pages 274 and 275, ***What Can Go Wrong*** in an experiment.
* Pages 280 - 282 (#9, 24 – 32). Be ready to discuss.

**FRIDAY, 2.7.25**

**Homework Check and Discussion!!** Pages 280 - 282 (#9, 24 – 32).

**Class Work/Homework:** Pages 282, 283 (#33 – 35, 37, 38, 40, 41). Be ready to discuss.