BS - Important Concepts Intro to Research Methods (Lessons 3, 4, 5)

1. Population = entire group of California residents;
2. Sample = 125 students;
3. Statistic = the average;
4. Parameter = a number that describes a population;
5. Sampling error = the difference between the sample and population averages;
6. Representative sample
7. Constructs = how hungry someone is after waking up; how thirsty an athlete is

after a game; your personality; your marketability as an employee;

1. Operational definition:

→ a way of turning constructs into variables we can measure;

→ a way of describing a variable in terms of the way we measure it;

1. Research studies:

→ data from individuals in a samples are used to learn about a population;

→ we expect our best guesses (estimates) of the population parameters to differ from the actual population;

→ the sample statistics will not be exactly equal to the population parameters they are estimating

→ We try to learn about the population using a sample. We do this by estimate population parameters using sample statistics. However, we can't expect our estimates to be exactly accurate when we do this.

1. Variables = score on an intelligence test
2. Hypotheses:

→ statements about the relationships between variables;

→ the more hours of sleep you get, the better your memory for faces

1. Extraneous/lurking variables:

→ provide possible alternative explanations for observed relationships between variables;

→ factors that could influence the relationships we measure between two or more variables;

→ should be controlled in an experiments;

→ make it difficult to make causal statements from data from observational studies.

1. x bar = sample average; 𝛍 / mu = population average;
2. n = sample size
3. Random sample:

→ select individuals in such a way that everyone has the same chance of being selected;

→ selection of one individual has no effect on anyone else's chances of being selected;

→ less biased, more likely to be representative of the population

1. In an experiment, the researcher manipulates the independent variable,

measures changes in the dependant variable and seeks to control the lurking variable.

1. Experimental study => we can make causal conclusions
2. Double-blind = neither the participants nor the researchers know which

treatment each person took

1. Placebo control condition = a group that is equal to the treatment groups in all

respects except that they do not receive the treatment under investigation

1. Why placebo? To help us to identify the presence of the lurking variables
2. Correlation does not imply causation.