

## Chapter 2 - research methods

### Psychology is a science

- Purpose - determine the causes of mental events and behaviors
- Theoretical Framework
  - Theory - systematic way of organizing observations
  - Hypothesis - proposed relation between the variables
  - Variable - any phenomenon that can vary along some dimension continuous
- Generalizability of Research
  - Internal validity - does the research measure what it is supposed to
  - External validity - does the experimental situation resemble the real world
- Measurement
  - Operationalizing
    - Variables - defining how each will be measured
      - Reliable - produce consistent measurement
      - Valid - actually measure the variable of interest

### Descriptive Research

- Describe phenomena rather than manipulate variable
  - Case Studies - in-depth study of the behavior of one person or a small group
  - Naturalistic Observation - study phenomenon in a natural setting
    - +good generalizability
    - -can alter behavior
  - Survey Research - asks questions of large numbers of people to get info on attitudes and behaviors
    - +can collect a lot of info very quickly
    - -accuracy and sampling issues
  - Correlational Research - determine the degree to which 2 or more variables are related
    - Positive correlation - same
      - Crime + ice cream sales
      - Weight + income
    - Negative correlation - different
      - Tv watched + GPA
    - No correlation
      - No relationship
    - DOES NOT ESTABLISH CAUSALITY!

Experimental Research - asks whether systematic variation in one variable produces variation in another variable

- Parts to a Research Study
  - Independent variable
    - Manipulated by experimenter
  - Dependent variable
    - Response of the subject
- Steps in conducting an experiment
  - Frame a hypothesis
  - Operationalize variables
  - Develop a standardized procedure
  - Select participants

- Apply statistical techniques
  - Draw conclusions
- Statistical Techniques
  - Descriptive Statistics
    - Summarize subject responses
    - Mean, median, mode
    - Standard deviation
  - Inferential Statistics
    - Tell us whether results are meaningful - statistically significant