Research Methods PowerPoint Slides

Four issues psychologists are interested in
Description
Explanation
Prediction
Control

Five basic steps to the scientific method
1. Formulate a problem.

- ♦ Decide how to gather empirical data (choose a research method).
- ♦ Obtain empirical data.
- ♦ Analyze the data; evaluate the results.
- ♦ Communicate your results.

Theories and Hypotheses

- ♦ Hypothesis—tentative explanation or prediction about something. What we usually start with; what we test through research. Leads to theories.
- ♦ Theories—a set of formal statements that explains how and why certain events are related to each other. Can lead to more hypotheses.

Operational Definitions

- ♦ A definition that you can test…that you can assign a number or value to.
- ♦ Example: Pain rating scale from 1-10 (with the sad & happy faces on it)

Types of Variables

- ♦ Independent: variable that is manipulated by the experimenter
- ♦ Dependent: variable that is measured & recorded
- ♦ Extraneous variables: uncontrolled variables that may affect the DV; confounds.

Types of Studies

- ♦ Naturalistic observation
- ♦ Case studies
- ♦ Surveys/self-report
- ♦ Correlations
- ♦ Quasi-experiments
- ♦ True experiments

Correlations

- ♦ Tell us the relationship between two variables. What happens to one variable if you change the other?

- Tells us NOTHING about causation. A could cause B; B could cause A; C could cause both A and B.
- Values range from –1.00 to 1.00.

Correlation Coefficients

- Take the absolute value to determine the strength. The closer the value is to –1 or to +1, the stronger the correlation.
- A correlation at or near zero means that no relationship exists between the variables.
- Strong negative correlation: As one variable goes up, the other goes down.
- Strong positive correlation: As one variable goes up, the other goes up.

True Experiments

- Manipulate at least one IV; measure at least 1 DV.
- Must have at least 2 groups to compare—control group and experimental (treatment) group
- Random assignment—hallmark of experiment.
- Control confounds.

Threats to Experimentation

- Confounding
- Experimenter bias
- Demand Characteristics
- Need double-blind study to combat demand characteristics and experimenter bias.

Internal and External Validity

- Internal Validity: the degree to which your experiment supports clear causal conclusions.
- External validity: the degree to which your results can be generalized to the real world.
- Usually, high internal validity is associated with low external validity and vice-versa.
- Need replication in different settings to maximize both.