

Research Methods

Philosophy Of Science

- Positivism
- Popper
- Operationism
- CV Theory
- Kuhn
- Realism
- T constructs
- Description vs explanation vs law vs prediction vs model vs theory
- Determinism vs mechanism vs reductionism vs humanism

Research Design

No random assignment of S's to conditions

- Sampling Methods
 - Non-probability
 - Probability
 - SRS
 - SYS
 - PPS
 - STR
 - Cluster
- Descriptive Study
 - Case study
 - Survey
 - Naturalistic
 - Interview
- Quasi-Experiment
 - Pre-post
 - Pre-post-control
 - Time series
 - Time series control
- Other
 - Cohort study
 - Guided interview
 - Retrospective
 - Prospective

Random assignment of S's to conditions

- Experiment
 - All sorts of stuff about confounding, blinding, placebo effects, matching, blocking, etc. *

Data Analysis

Qualitative Data

- Reduce
- Summarize
- Convey meaning
- Loss functions
- Content
- Narrative
- Discourse
- Framework
- Grounded Theory

Quantitative Data

- Univariate
 - shape
 - location
 - spread
 - kurtosis
- Bivariate
 - linear correlation
 - non-lin correl
- Multivariate
 - MDS
 - PCA
 - FA
- Metric vs Non-metric
- Model fitting

No room but we don't teach much of this stuff anyway.

Statistics

Estimation

Hypothesis Testing

- Decision procedures
- Point hypotheses
- Distribution theory
- Test statistics
- Theory of errors

Measurement

- Reliability
- Validity
- CTT
- IRT

* All designed to attune students to the ways in which our methods of design can cause our research to mislead us about the way in which the world really is. The major reason for research methods in the first place. The reason we must pay attention to these issues is that most of these principles are nothing but hard learned lessons about the way in which we deceive ourselves by the methods we use to try to understand the world. Although they are listed under experiments, these are principles that apply to ALL methods of data collection and analysis.