What We Will Cover in This Section

• Overview.
• Research techniques.
• Literature Reviews.

Research Purposes

• Basic research.
  – Basic knowledge.
  – Theory oriented.
• Applied Research.
  – Problem solving.
  – Task oriented.
• Program Evaluation
  – Has a particular program met its goals?
• Action research.
  – Integration of all three to solve a major problem.
Research Locations

- **Laboratory.**
  - **Benefits.**
    - High control.
    - Good measurement.
    - High internal validity.
  - **Issues.**
    - Low realism.
    - Low external validity.

- **Field.**
  - **Benefits.**
    - High realism.
    - High external validity.
  - **Issues.**
    - Low level of control.
    - Measurement problems.
    - Internal validity.

Data Collection Strategies

- **Quantitative.**
  - Focus on gathering numerical data.
  - **Benefits.**
    - Easy to tabulate.
    - Objective.
    - Statistical analysis.
  - **Issues.**
    - May be artificial.
    - Narrow focus.
    - May lose individuals in summary data.

- **Qualitative.**
  - Focus on gathering descriptive data.
  - **Benefits.**
    - Ongoing behavior.
    - Open ended.
    - Realism.
  - **Issues.**
    - Measurement.
    - Difficult to tabulate.
    - Reactivity.

Research Techniques
### Basic Experiment

<table>
<thead>
<tr>
<th>Treatment Groups</th>
<th>Independent Variable</th>
<th>Dependent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>Treatment (s) controlled by the experimenter</td>
<td>Measurement(s) made after the treatments are applied.</td>
</tr>
<tr>
<td>Group 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Experimental Technique

**Advantages.**
- High degree of control.
- Conclude cause and effect.
- Permits statistical analysis.

**Disadvantages.**
- Low realism.
- Restricted to variables that can be manipulated.
- Difficult to look at complex interactions between variables.
- Low external validity.
- Ethical issues.

### Correlation Technique

![Correlation Graph](Performance vs. Sociability)
Correlational Technique

- Advantages.
  - Looks at the strength of relationships.
  - Permits statistical analysis.
  - Permits assessing variables that may not be amenable to other strategies.
  - Can make predictions.

- Disadvantages.
  - Cannot conclude causality.
  - Low level of control.
  - Statistical assumptions.

Observational Technique

- Advantages.
  - See natural, ongoing behavior.
  - See rare or fleeting phenomena.
  - See dangerous events.
  - Initial data gathering in new research.
  - Does theoretical research work in the real world?
  - Idiographic.

- Disadvantages.
  - Low level of control.
  - Reactivity.
    - Participant.
    - Researcher.
  - Cannot conclude causality.
  - Difficult to generalize.

Developmental Techniques
Advantages and Disadvantages

• Advantages
  – Document behavior changes as a function of maturation.

• Disadvantages
  – May be confounded by cohort effect.
  – May not be able to conclude causality.
  – Can take a great deal of time.

Research Reports

What We Will Cover

• What a research report is.
• Anatomy of a research report.
• Kinds of research reports.
• Sources.
What is a Research Report?

A formal document that presents the results of some empirical study.
– Usually peer reviewed.
– Usually published.
– Usually presents original research.
– Has a highly structured format.

Format

Abstract

• Summarizes the research report in 100-150 words.
• Lets the reader decide if the study is of interest.
• Generally summarizes
  – Introduction
  – Method
  – Results
  – Discussion.
• May over simplify.
**Introduction**

- Describes the specific problem being studied.
- Summarizes previous research.
- Describes the basic research strategy.
- Describes the research hypothesis.

**Method**

- Describes in detail how the study was conducted.
  - Participants.
  - Apparatus.
  - Manipulations.
  - Measurement tools.
  - Procedure.
- Should be so detailed that the reader could replicate the study.

**Results**

- Describes the data collected, any statistical analyses, and the conclusions drawn from the statistical analyses.
- The most difficult section to understand.
Discussion

- Summarizes the results, presents the implications of the data and may include a critique of the study.
  - Includes alternative interpretations of the data.
  - Describes the limitations of the study.
  - May suggest further research.

Types of Research Reports

Primary Research

- This report summarizes the research done by the authors.
  - Typically summarizes a single research project.
  - Usually the only report; it is unethical to report the same study in several publications.
  - Successful replications are rarely published.
Literature Review

- This report summarizes all of the research done on a particular topic.
  - Typically focus on a specific area.
  - Review what is known and what is not known in the area.
  - Very good source of information on a specific topic area.
  - Considered to be secondary research.

Theoretical Paper

- This is a publication that develops a theoretical explanation for a some particular area.
  - Typically the authors support their theory with data from primary research.
  - Typically authors describe why their theory is better than other theories.
  - Considered to be secondary research.

Meta Analysis

- A research report that summarizes a set of statistical procedures for combining the results of a number of studies.
  - Provides a general assessment of the relationship between similar variables.
  - The focus is on statistical data, not conceptual information.
  - Considered to be secondary research.
What Quizzes May Look Like

Sample Multiple Choice Item.

1. This course is called
   A. Elementary physics
   B. Fun with sushi.
   C. Research methods in psychology.
   D. Existential phenomenology.

Typical TRUE FALSE items.

1. TRUE FALSE  California University of Pennsylvania is not located in the state of California.

2. TRUE FALSE  Your professor is Wolley Segap.
Typical Fill In Items

This course meets on (day of the week) ________________ nights.

What kind of tie does your instructor wear?

Typical Definition

Define and give an example of the term CHEATING.

CHEATING occurs when a person copies another person’s work and turns it in as his/her own. An example would be copying someone’s quiz answers or turning in someone else’s paper and taking credit for it.

Examples of Bad Definitions.

CHEATING is when you cheat and do bad things. Like taking your friend's pencil.

CHEATING is illegal stuff people do in class and they get caught.