

Research Methods

Experimental Research
Descriptive Methods
Correlational Research
Biological Research

Step 3- Research Design

- ψ The hypothesis must be tested by using the appropriate research methods
- ψ What type of study would best test your hypothesis?
- ψ What participants will you use?
- ψ What will be the procedure of your study?

Experimental Method

- ψ This is the ONLY research design that can examine a _____

- ψ A study in which the investigator _____
while measuring at least one other variable.
 - Determines a _____

Step 3-Designing a Study

Ψ Variables are a condition or characteristic that is
either within situations or individuals

Ψ There are two types of variables in every study:

- Independent variable:

- _____

- Dependent variable:

- _____

Variables

Ψ Independent Variable is the variable is
directly and purposefully manipulated
by the experimenter

Ψ _____

So, what will happen if...?

Ψ Dependent Variable is the behavior that is
measured because it is expected to

_____.

Ψ _____

Identify the Variable
Independent and Dependent?

Ψ Developmental psychologists want to know if exposing children to differing amounts of public television improves their reading skills.

Ψ IV _____

Ψ DV _____

Name the Variables!

Ψ A clinical psychologist is interested in how heart rate is affected by viewing a violent film as opposed to a nonviolent film

Ψ IV _____

Ψ DV _____

Try another one

Ψ Cognitive psychologists are interested in what types of diagrams are easiest for people to remember

Ψ IV _____

Ψ DV _____

OK, Last One...

Ψ An industrial/organizational psychologist tests to see if wearing name tags makes employees happier with their work

Ψ IV _____

Ψ DV _____

Designing the Study Who will you study?

Ψ Participants in a study are individuals in an experiment whose behaviors are observed.

- This information will produce data

- _____
- _____
- _____

Participants are randomly assigned to one of two groups:

1. The Control Group-(Comparison group)

- _____
- _____

- It does not receive the treatment

2. The Experimental Group- receives new treatment

- _____

Types of Research

ψ Descriptive Methods involve describing events that already exist

This research method is used to observe and record behavior without producing an explanation

Naturalistic Observation

ψ A systematic observation what many people do under natural conditions,



Ask questions...

Ψ _____ are another method of gathering data from a wide selection of people

- Based on people's responses to specific questions

Ψ Unfortunately most surveys rely on self report and _____



Case Study

Ψ _____

- These are well-suited to observe unusual behaviors or conditions , but their _____

Phineas Gage (1848)...

Yes he LIVED!



Correlational Studies

ψ A procedure in which investigators measure the correlation between two variables.

- Without manipulating or controlling either of them

ψ Correlation: _____

Correlational coefficient

ψ Correlation indicates _____.

It allows for prediction of one variable based on the other variable.

ψ Example- A researcher may examine whether a toddler's

The strength of the relationship is measured by a correlation coefficient which ranges from _____

- +1: perfect positive correlation (perfect relationship)
- 0: no correlation (no relationship)
- 1: perfect negative correlation (perfect relationship)

Three Types of Correlation

Years of Education

Salary

(a) Positive Correlation

Exam Scores

Class Absences

(b) Negative Correlation

Intelligence

Shoe Size

(c) Zero Correlation

ψ In a positive correlation, the two factors move (or vary) in the _____

ψ In a negative correlation, the two factors vary in opposite directions— _____

ψ Sometimes there is no relationship between two variables—a zero correlation.

Name that Correlation!

ψ As a child's age increases so does her height

ψ The more time a person spends on a treadmill the less they weigh

ψ The amount of time a college student studies and their height in inches

“Correlation is not causation!”

Just because there is a correlation between two variables does not mean that _____

What happens after the study is completed and the data is examined?

It is time to draw a conclusion
"Was I right?"

Was my prediction correct?

- ⦿ Researchers draw conclusions about the results of the study. Did the information support or oppose their hypothesis?
- ⦿ Don't forget...this information **MUST** be

What happens to the information yielded in study?

ψ If the information produced in a study supports the original hypothesis it is published in the scientific community in _____

ψ _____

Ethics in Research

Could the results of a study be BIASED?

A good scientific experiment also protects against potential sources of error from both the researcher and the participants

Ethics in Research

Ψ Ethics are the rules _____

- These rules govern the treatment of animals, humans, and the responsibilities of investigators

Participants must be informed

- Ψ One rule states human participants must give the researcher their _____ before a study.
- Ψ Participants must be advised about the purpose and _____

Ethics in Research

- Ψ Participants cannot be coerced into doing something psychologically or physically harmful, or that violates standards of decency
- Ψ At the end of the study, participants must go through [debriefing](#)

Why do researchers have these rules?

- Ψ History of controversial psychological experiments that would now be considered UNETHICAL.
- Ψ Examples:
 - Phillip Zimbardo- [The Stanford Prison Study](#)
 - [Stanley Milgram](#)- The Perils of Obedience

Next Class...

Ψ Biopsychology

- How is the nervous system organized?
- How do “brain chemicals” influence our behavior?
