

Introduction to Psychology Research Methods

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If you're a psychology student or just want to understand the basics of psychology experiments, here's an overview of research methods, what they mean, and how they work.

The Three Types of Psychology Research



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1. Causal or Experimental Research
2. Descriptive Research
3. Relational or Correlational Research

Theory and Hypothesis

People often confuse the terms *theory* and *hypothesis* or are not quite sure of the distinctions between the two concepts. If you're a psychology student, it's essential to understand what each term means, how they differ, and how they're used in psychology research.

A [theory](#) is a well-established principle that has been developed to explain some aspect of the natural world. A theory arises from repeated observation and testing and incorporates facts, laws, predictions, and tested hypotheses that are widely accepted.

A [hypothesis](#) is a specific, testable prediction about what you expect to happen in your study. For example, an experiment designed to look at the relationship between study habits and test anxiety might have a hypothesis that states, "We predict that students with better study habits will suffer less test anxiety." Unless your study is exploratory in nature, your hypothesis should always explain what you expect to happen during the course of your experiment or research.

While the terms are sometimes used interchangeably in everyday use, the difference between a theory and a hypothesis is important when studying experimental design.

Some other important distinctions to note include:

- A theory predicts events in general terms, while a hypothesis makes a specific prediction about a specified set of circumstances.
- A theory has been extensively tested and is generally accepted, while a hypothesis is a speculative guess that has yet to be tested.

The Effect of Time in Psychology Research

There are two types of time dimensions that can be used in designing a research study:

1. [Cross-sectional research](#) takes place at a single point in time.
 1. All tests, measures, or variables are administered to participants on one occasion.
 2. This type of research seeks to gather data on present conditions instead of looking at the effects of a variable over a period of time.
2. [Longitudinal research](#) is a study that takes place over a period of time.
 1. Data is first collected at the beginning of the study, and may then be gathered repeatedly throughout the length of the study.
 2. Some longitudinal studies may occur over a short period of time, such as a few days, while others may take place over a period of months, years, or even

decades.

3. The effects of aging are often investigated using longitudinal research.

Causal Relationships Between Variables

What do we mean when we talk about a “relationship” between variables? In psychological research, we're referring to a connection between two or more factors that we can measure or systematically vary.

One of the most important distinctions to make when discussing the relationship between variables is the meaning of causation.

A **causal relationship** is when one variable *causes* a change in another variable. These types of relationships are investigated by experimental research in order to determine if changes in one variable actually result in changes in another variable.

Correlational Relationships Between Variables

A [correlation](#) is the measurement of the relationship between two variables. These variables already occur in the group or population and are not controlled by the experimenter.

- A **positive correlation** is a direct relationship where, as the amount of one variable increases, the amount of a second variable also increases.
- In a **negative correlation**, as the amount of one variable goes up, the levels of another variable go down.
- In both types of correlation, there is no evidence or proof that changes in one variable *cause* changes in the other variable. A [correlation](#) simply indicates that there is a relationship between the two variables.

The most important concept is that correlation does not equal causation. Many popular media sources make the mistake of assuming that simply because two variables are related, a causal relationship exists.

Article Sources

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content accurate, reliable, and trustworthy.

- University of Minnesota Libraries Publishing. Psychologists Use Descriptive, Correlational, and Experimental Research Designs to Understand Behavior. In: *Introduction to Psychology*. 2010.