

IMPORTANT TERMS IN A TERM PAPER

Abstract

All abstracts are written with the same essential objective: to give a summary of your study. But there are two basic styles of abstracts: Descriptive and Informative. Here is a brief delineation of the two:

Descriptive abstract	Around 100-200 words (or shorter) in length; indicates the type of information found in the paper; briefly explains the background, purpose, and objective of the paper but omits the results, often the methods, and sometimes also the conclusion
Informative abstracts	One paragraph to one page in length; a truncated version of your paper that summarizes every aspect of the study, including the results; acts as a "surrogate" for the research itself, standing in for the larger paper

Of the two types of abstracts, informative abstracts are much more common, and they are widely used for submission to journals and conferences. Informative abstracts apply to lengthier and more technical research and are common in the sciences, engineering, and psychology, while descriptive abstracts are more likely used in humanities and social science papers. The best method of determining which abstract type you need to use is to follow the instructions for journal submissions and to read as many other published articles in those journals as possible.

Research Abstract Guidelines and Requirements

As any article about research writing will tell you, authors must always closely follow the specific guidelines and requirements indicated in the Guide for Authors section of their target journal's website. The same kind of adherence to

conventions should be applied to journal publications, for consideration at a conference, and even when completing a class assignment.

Each publisher has particular demands when it comes to formatting and structure. Here are some common questions addressed in the journal guidelines:

- Is there a maximum or minimum word/character length?
- What are the style and formatting requirements?
- What is the appropriate abstract type?
- Are there any specific content or organization rules that apply?

There are of course other rules to consider when composing a research paper abstract. But if you follow the stated rules the first time you submit your manuscript, you can avoid your work being thrown in the “circular file” right off the bat.

What are the 5 parts of an abstract?

Abstracts commonly have these parts: introduction, purpose, method, result, and conclusion. Each part has a different communicative goal or specific function. Most abstracts examined had purpose, method, and result with about half including a clear introduction and conclusion.

Hypothesis

A hypothesis is a proposed explanation for a phenomenon. For a hypothesis to be a scientific hypothesis, the scientific method requires that one can test it. Scientists generally base scientific hypotheses on previous observations that cannot satisfactorily be explained with the available scientific theories.

It can be also called a supposition or proposed explanation made on the basis of limited evidence as a starting point for further investigation.

Example of a hypothesis

It's essentially an educated guess—based on observations—of what the results of your experiment or research will be. Some hypothesis examples include: If I water plants daily they will grow faster. Adults can more accurately guess the temperature than children can.

If you want to test a relationship between two or more variables, you need to write hypotheses before you start your experiment or data collection.

Example: Hypothesis

Daily apple consumption leads to fewer doctor's visits.

What is a hypothesis?

A hypothesis states your predictions about what your research will find. It is a tentative answer to your research question that has not yet been tested. For some research projects, you might have to write several hypotheses that address different aspects of your research question.

A hypothesis is not just a guess – it should be based on existing theories and knowledge. It also has to be testable, which means you can support or refute it

through scientific research methods (such as experiments, observations and statistical analysis of data).

Variables

A variable in research simply refers to a person, place, thing, or phenomenon that you are trying to measure in some way. The best way to understand the difference between a dependent and independent variable is that the meaning of each is implied by what the words tell us about the variable you are using.

The purpose of all research is to describe and explain variance in the world. Variance is simply the difference; that is, variation that occurs naturally in the world or change that we create as a result of a manipulation. Variables are names that are given to the variance we wish to explain.

A variable is either a result of some force or is itself the force that causes a change in another variable. In experiments, these are called dependent and independent variables respectively. When a researcher gives an active drug to one group of people and a placebo , or inactive drug, to another group of people, the independent variable is the drug treatment. Each person's response to the active drug or placebo is called the dependent variable. This could be many things depending upon what the drug is for, such as high blood pressure or muscle pain. Therefore in experiments, a researcher manipulates an independent variable to determine if it causes a change in the dependent variable.

Case example of independent and dependent variables

As we learned earlier in a descriptive study, variables are not manipulated. They are observed as they naturally occur and then associations between

variables are studied. In a way, all the variables in descriptive studies are dependent variables because they are studied in relation to all the other variables that exist in the setting where the research is taking place. However, in descriptive studies, variables are not discussed using the terms "independent" or "dependent." Instead, the names of the variables are used when discussing the study. For example, there is more diabetes in people of Native American heritage than people who come from Eastern Europe. In a descriptive study, the researcher would examine how diabetes (a variable) is related to a person's genetic heritage (another variable).

Case example of descriptive study variables

Variables are important to understand because they are the basic units of the information studied and interpreted in research studies. Researchers carefully analyze and interpret the value(s) of each variable to make sense of how things relate to each other in a descriptive study or what has happened in an experiment.

Variables in hypotheses

Hypotheses propose a relationship between two or more types of variables.

- An independent variable is something the researcher changes or controls.
- A dependent variable is something the researcher observes and measures.

If there are any control variables, extraneous variables, or confounding variables, be sure to jot those down as you go to minimize the chances that research bias will affect your results.

Example: Hypothesis

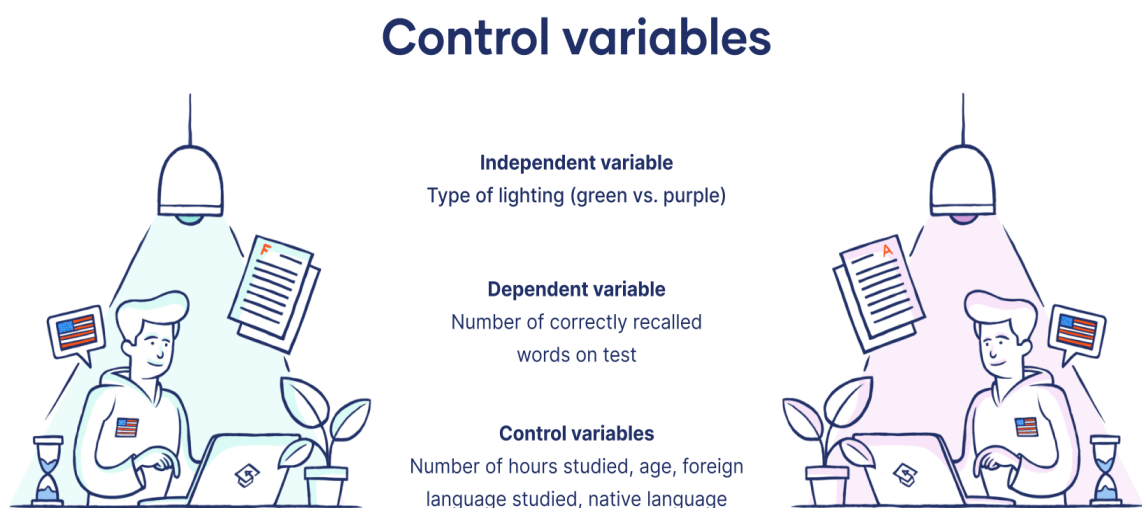
Daily exposure to the sun leads to increased levels of happiness.

In this example, the independent variable is exposure to the sun – the assumed cause. The dependent variable is the level of happiness – the assumed effect.

Control Variables | What Are They & Why Do They Matter?

A **control variable** is anything that is held constant or limited in a research study. It's a variable that is not of interest to the objective of the study, but is controlled because it could influence the outcomes.

Variables may be controlled directly by holding them constant throughout a study (e.g., by controlling the room temperature in an experiment), or they may be controlled indirectly through methods like randomization or statistical control (e.g., to account for participant characteristics like age in statistical tests). Control variables can help prevent research biases like omitted variable biases from affecting your results.



Examples of control variables-

Research Question-Does soil quality affect plant growth?

Control variables

- Temperature
- Amount of light
- Amount of water

Research Question- Does caffeine improve memory recall?

Control Variables

- Participant age
- Noise in the environment
- Type of memory test

Research Question-Do people with a fear of spiders perceive spider images faster than other people?

Control Variables

- Computer screen brightness

- Room lighting
- Visual stimuli sizes

Research Objectives | Definition & Examples

Research objectives describe what your research is trying to achieve and explain why you are pursuing it. They summarize the approach and purpose of your project (term paper) and help to focus your research.

Your objectives should appear in the introduction of your term paper, at the end of your problem statement. They should:

- Establish the scope and depth of your project
- Contribute to your research design
- Indicate how your project (term paper) will contribute to existing knowledge

Syllogism

Syllogism Verbal Reasoning Questions and Answers: A syllogism is a form of reasoning in which two statements or premises are used to draw a conclusion. It is a fundamental structure in formal logic and is used to demonstrate the validity of an argument. A syllogism typically consists of three parts:

1. **Major Premise:** This is the first statement or premise that sets the general context for the argument.

1. **Minor Premise:** This is the second statement or premise that provides specific information or context within the scope of the major premise.

1. **Conclusion:** This is the logical inference or deduction that follows from the major and minor premises.

Syllogisms follow a specific structure, often referred to as a categorical syllogism, where both premises and the conclusion are expressed in terms of categorical statements using categories like “All,” “Some,” or “No.” These categorical statements fall into one of the four basic forms:

1. **All A are B.**

1. **No A are B.**

1. **Some A are B.**

1. **Some A are not B.**

Syllogism – Sample Problems

Problem 1:

All cats are mammals.

Some dogs are mammals.

Therefore, some dogs are cats.

Answer: Invalid

Explanation: The conclusion of a syllogism must be supported by both premises. While it is true that some mammals are dogs, this does not necessarily mean that all dogs are cats.

Problem 2:

All humans are mortal.

Socrates is human.

Therefore, Socrates is mortal.

Answer: Valid

Explanation: This syllogism is valid because the conclusion logically follows from the premises. All humans are mortal, and Socrates is human, therefore Socrates must be mortal.

Problem 3:

No birds are fish.

Penguins are birds.

Therefore, penguins are not fish.

Answer: Valid

Explanation: This syllogism is valid because the conclusion logically follows from the premises. No birds are fish, and penguins are birds, therefore penguins must not be fish.

Problem 4:

Some athletes are runners.

All runners are fast.

Therefore, some athletes are fast.

Answer: Valid

Explanation: This syllogism is valid because the conclusion logically follows from the premises. Some athletes are runners, and all runners are fast, therefore some athletes must be fast.

Problem 5:

No politicians are honest.

All lawyers are politicians.

Therefore, no lawyers are honest.

Answer: Valid

Explanation: This syllogism is valid because the conclusion logically follows from the premises. No politicians are honest, and all lawyers are politicians, therefore no lawyers must be honest.

Problem 6:

Some doctors are surgeons.

All surgeons are skilled.

Therefore, some doctors are skilled.

Answer: Valid

Explanation: This syllogism is valid because the conclusion logically follows from the premises. Some doctors are surgeons, and all surgeons are skilled, therefore some doctors must be skilled.

Problem 7:

All dogs have four legs.

Fido is a dog.

Therefore, Fido has four legs.

Answer: Valid

Explanation: This syllogism is valid because the conclusion logically follows from the premises. All dogs have four legs, and Fido is a dog, therefore Fido must have four legs.

Problem 8:

No cats are carnivores.

Tigers are cats.

Therefore, tigers are not carnivores.

Answer: Invalid

Explanation: This syllogism is invalid because the conclusion does not logically follow from the premises. While it is true that tigers are cats, this does not necessarily mean that all cats are not carnivores.

Problem 9:

All mammals have lungs.

Whales are mammals.

Therefore, whales have lungs.

Answer: Valid

Explanation: This syllogism is valid because the conclusion logically follows from the premises. All mammals have lungs, and whales are mammals, therefore whales must have lungs.