Lesson Plan: AP Psychology 3rd Period Staunton

Module 6: Correlation and Experimentation

Focus: Experimentation

Objective:

Warm-up/Review: How do Correlational studies differ from Experimentation? Correlations can only predict the outcome of the other variable. Correlation is not Causation. Correlations are not a cause and effect explanation. Experiments isolate cause and effect by manipulating one or more variables while controlling other variables.

Experimental Group – the group being manipulated.

Control Group – the group not being manipulated.

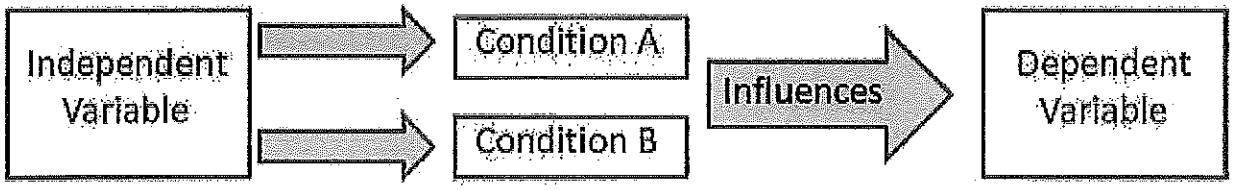
Random Assignment – Assigning participants to experimental and control groups by chance, thus minimizing preexisting differences between the different groups.

Remember: Double blind procedure is the best way to conduct an experiment in regard to bias.

So, you have the experimental group that you will manipulate. It is here you will manipulate the variable whose effect is being studied – the **independent variable.**

The **dependent variable** is the outcome factor; the variable that may change in response to manipulations of the independent variable.

In an experiment, the researcher is looking for the possible effect on the dependent variable that might be caused by changing the independent variable.



Examples

- Effect of fertilizer on plant growths:
  In a study measuring the influence of different quantities of fertilizer on plant growth, the independent variable would be the amount of fertilizer used. The dependent variable would be the growth in height or mass of the plant. The controlled variables would be the type of plant, the type of fertilizer, the amount of sunlight the plant gets, the size of the pots, etc.

- Effect of drug dosage on symptom severity:
  In a study of how different doses of a drug affect the severity of symptoms, a researcher could compare the frequency and intensity of symptoms when different doses are administered. Here the independent variable is the dose and the dependent variable is the frequency/intensity of symptoms.

- Effect of temperature on pigmentation:

In measuring the amount of color removed from beetroot samples at different temperatures, temperature is the independent variable and amount of pigment removed is the dependent variable.

- Effect of sugar added in a coffee:

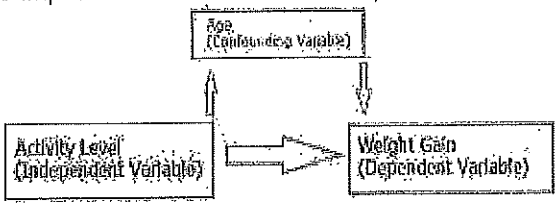
The taste varies with the amount of sugar added in the coffee. Here, the sugar is the independent variable, while the taste is the dependent variable.

IV and DV Practice Worksheet

Confounding Variable (third variable)– a factor other than the independent variable that might produce an effect in an experiment.

What is a Confounding Variable?

A **confounding variable** is an "extra" variable that you didn't account for. They can ruin an experiment and give you useless results. They can suggest there is correlation when in fact there isn't. They can even introduce bias. That's why it's important to know what one is, and how to avoid getting them into your experiment in the first place.



For **example**, if you are researching whether a lack of exercise has an effect on weight gain, the lack of exercise is the independent **variable** and weight gain is the dependent **variable**. A **confounding variable** would be any other influence that has an effect on weight gain.

Placebo effect – Experimental effects caused by expectations alone; any effect on behavior caused by the administration of an inert substance or condition, which the recipient assumes is an active agent.