Specific aims : By the end of the lesson the student will be able to :

- develop scientific skills required to conduct an experiment in psychology.
- develop knowledge about the characteristics of experimental methods.
- identidy and operationalise dependent and independent variables.

LESSON ONE : The Experimental Method

The true method of knowledge is experiment' – William Blake

In order for psychology to be regarded as a science it is necessary that rigorously conduc-ted experiments are undertaken, so much psychological research is performed in this manner

The **experimental method** is a scientific research method involving the manipulation of variables to determine **causality** (cause and effect relationships). **A variable** is anything that can occur differently in some way in an experiment and thus has an effect on the findings.

Psychologists use the experimental method to identify the "effect" one variable has on other variables. In other words….does one variable "cause" other variables to change ?. This is called **cause and effect.** Being able to conduct research that establishes cause and effect is a key feature of scientific research. However establishing cause and effect is not easy and requires researchers to conduct studies that not only follow the scientific method, but also classify as "true experiments".

In a true experiment, there must be a **control condition** and an **experimental condition** and participants must be **randomly assigned or allocated** (without **bias** in selection) to the different conditions (testing groups), which means that the conditions should be fairly equal in terms of the types of people in the testing groups.

A researcher manipulates the **independent variable (IV)** in order to test its effect on the **dependent variable (DV)**.

Everything else is kept the same (**controlled)** between the two conditions.

If there is a significant difference in the results of the two groups, we can conclude that the independent variable **caused** the change in the dependent variable (cause and effect).

Independent and dependent variables

Every experiment has at least one indepedent variable and one dependent variable , a researcher manipulates the **independent variable (IV)** and measures the effect of this on the **dependent variable (DV).**

All other variables that might potentially affect the DV should remain constant.

This means the researcher can be confident that the effect on the DV, was due to the change in the IV and nothing else.

Independent Variable:. It gets its name from the fact that it is independent of the participants' control, as it is a variable that **manipulated** by the researcher – or changes naturally.

Dependent Variable: The variable that is **measured** by the researcher. Any effect on the DV should be caused by changes in the IV.

Operational Definitions

Psychologists are interested in a range of behaviour; intelligence, aggression, social anxiety etc. It's important when studying them that they are defined. Operationalisation is clearly defining variables so they can be measured.

Operationalisation of a variable means that the variable is stated in terms that show how it is measured.Ask yourself how can i present this variable as a number ?For example :

- Age : operationalised as age in total months.
- IQ : operationalised as the score on 40- item multiple-choice test.

Agression :operationalised as the number of agressive responses in an observed 30-minute period.