UNIVERSITY OF KHEMIS MILIANA

Level : 3rd Year Counseling & Guidance

2nd Semester 2023

SUBJECT :ENGLISH **Prof :D.MEZAINI**

Specific aims :

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

- Identify the different types of variables in experimental research.
- Identidfy the different ways to minimize the effect of the extraneous or confounding variables.

LESSON FIVE :Control of variables

The key to an experiment is that the independent variable (IV) is manipulated (changed) to see how this affects the dependent variable (DV). Remember, the researcher only wants the IV to **affect** the DV. If however, there are other variables that may influence the IV or DV (and these are unwanted) these are extraneous variables.

Extraneous variables:

Any variable, other than the independent variable (IV), that **may** have an effect on the dependent variable (DV) if it is not controlled.

These variables can come from the **participant** (e.g. age, intelligence), the experimental **situation** (e.g.noise levels, temperature) or the **experimenter** (e.g. personality, appearance or conduct of the researcher)

Confounding variables:

Any variable, other that the independent variable (IV), that has not been controlled so do **affect** the DV.Therefore we cannot be sure of the true reason for the changes to the DV/difference found.

Demand characteristics:

Participants are not 'passive' in experiments and they may work out what is going on and change their behaviour to please the experimenter or even act negatively. Demand characteristics occur when a participant may receive a 'cue' from the researcher or the situation and so the participant changes their behaviour as a result.

Investigator effects:

Any effects of the investigator's behaviour (conscious or unconscious) on the research outcome (DV). This may include everything from the design of the study, to the selection of and interaction with the participants during the research

process.

Ways to minimise extraneous/confounding variables:

Randomisation:

Randomisation is the use of ‘chance’ in order to control for the effects of bias i.e. in a memory experiment that may involve participants recalling words from a list. The order of the list should be *randomly* generated so that the position of each word is not decided by the experimenter.

Standardisation:

This is using exactly the same procedures for all participants, such as the same environment, instructions and experience.