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 :

- familiar with the features of the different experimental designs when planning and conducting research and their associated strengths and weaknesses.

LESSON THREE :Experimental Design

Experimental design refers to how the participants in an experiment will be used. A researcher can arrange his/her participants in one of three ways. **Independent groups**, **repeated measures or matched pairs.**

1.Independent groups: :An independent group design is when two separate groups of participants experience two different conditions of the experiment.

Strengths:	Limitations:
1. Order effects are avoided (when participants become aware of or bored with an experimental procedure). 2. There are less likely to be demand characteristics because participants only take part in one condition of the experiment and are therefore less likely to pick up on cues.	1. Individual differences between groups,otherwise called "participant variables", may affect the results (what if one group has people who have a naturally higher IQ than people in the other group?) – to deal with this **random allocation** is used. 2. A larger amount of participants are needed in this experimental design.

2-Repeated groups:

A repeated measures design is where *all* participants take part in both conditions.

Strengths:	Limitations:
1. Participant variable problems are	**1.** Order effects are very likely to occur;

avoided because allparticipants take part in both conditions. Therefore, it doesn't matter if they have different IQs or memory abilities because they are kept constant through both conditions. 2. This experimental design requires fewer participants because the same group is re-used.	participants may become bored, aware of aims or tired because they carry out a task twice. They would need to control for this by using counterbalancing. 2. Demand characteristics are more likely to occur because participants have been exposed to both conditions of the experiment and therefore may pick up on cues or figure out the aim of the experiment. 3. The researcher will need to ensure they havedifferent test materials for condition1 and 2. Forexample, they would not be able to use the same list of words in a memory test in both conditions. To control for this they have to use a different set of words but make sure they are of similar difficulty.

Dealing with order effects: Counterbalancing

Counterbalancing is an attempt to control **order effects** in which half the participants take part in condition (A) then(B), and the other half take part in condition (B) then (A). (ABBA technique).

Now, counterbalancing does *not* remove or prevent order effects, but *attempts* to balance out the effects of order between the two conditions.

3-Matched pairs:

A matched pairs design is where pairs of participants are first matched on a key variable/s (i.e. IQ). Then one member is assigned to condition (A) and the other assigned to condition (B).

Strengths:	**Limitations:**
1. The issue of participant variables is greatly reduced. ***2.*** Order effects are totally avoided. ***3.*** Demand characteristics less likely.	1. It is pretty much impossible to match people exactly on every characteristic;unless maybe they are identical twins – and even then, it is usually just matching physical characteristics. 2. It is very time-consuming to find lots of people that match each other so closely.

Example of using matched pairs design in psychological research:
Bandura et al. investigated the effect of observing aggressive and non aggressive role models on children's behaviour. Would they imitate the aggression they had seen?
In order to control for naturally occurring aggression levels in the children (so it would not confound the DV) he got the children's parents and teachers to rate their aggression on a 1-5 scale.
He then matched the children on their aggression levels so each condition had the same number of highly aggressive children (5), medium aggression (4-2) and non aggressive children (1).