

Practical Investigation & Research

Methods

Aim: “To investigate/to determine the effect of (IV) on (DV)/whether (IV) has an effect on (DV)

→ a specific aim should identify the independent and dependent variables

Hypothesis [IF, THEN, WHEN]: “If (simple IV) affects (simple DV) then (population) will have (increased/decreased)... when presented with (condition 1) compared to those presented with (condition 2).

Independent variable: What you are changing

Dependent variable: What you are measuring

Extraneous and confounding variables summary:

Variable	Description	Example	Why a potential extraneous or confounding variable?	How can these variables be overcome?
Individual participant differences	Unchangeable variables that influences the results based on personal experience	Age, sex, culture, race	It is hard to tell if the IV influences results or the individual participant differences.	Random allocation – getting results from different people. Matched participants – to see if the trends

				are the same between people with the same characteristics.
Non-standardised instructions and procedures	The difference in how the researcher conducts the experiment across all groups in the experiment.	Having a difference in the procedure/setting.	Experiment is not standardised and this can cause potential unexpected skews in data making data unreliable.	Standardise procedure so steps are the same.
Order effect	When performance as measured by DV is influenced by a specific order, in which conditions are presented, resulting in a carry-over effect.	When the same word list is presented for both trials – participants would have already started to memorise the list from the first trial.	Affects DV and is not IV, can be controlled.	Independent group research method
Experimenter effect	A change in participant's response due to experimenter's expectations, biases, actions	Hostility or warmth when speaking.	Affects DV and is not IV	

Placebo effect	A change in the responses of participants due to their belief that they are receiving some kind of experimental treatment and they respond in accordance with that belief rather than to the effects of the IV.	If participants believe they are meant to remember fewer words for the Word List 2 – Maintenance Rehearsal condition compared to the control condition, they will remember fewer words.	It is not the IV but affects the DV (the accuracy of word recall as operationalised by the number of words correctly recalled).	Using the single blind procedure means randomly allocating subjects to either control/experimental group without their knowledge. Since they won't know which group they belong to, their knowledge will not affect results.