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 :

- Develop aims and questions,formulate hypotheses and make predictions.
- Determine aims,research hypotheses,questions and predictions that can be tested.

LESSON TWO: Aims and Hypotheses

An aim is a general statement of what the researcher intends to investigate, essentially the purpose of the study. Aims tend to be developed from theories. For example, a study aims to investigate whether drinking energy drinks makes people more talkative or the **aim** might be, in another hypothetical study, 'to see whether sinistrals (left-handers) perform better in a spelling test than dextrals (right-handers)'. The **hypothesis** for this might be 'sinistrals will spell more words correctly in a test than dextrals' .

Once the aim is written, the researcher needs to formulate a **hypothesis. A hypothesis is a testable statement predicting the outcome of the study**. A hypothesis should always be **operationalised**, meaning that the IV and DV should always be precisely defined in terms of **how they can be measured.** In our example, the IV are dextrals (right-handers) and sinistrals (left-handers). The DV is the number of words correctly recalled out of 20 on a spelling test.

Aternative, Experimental And Null Hypotheses

Just when you thought you understood hypotheses, we have some further distinctions to make:

The **null hypothesis (H0)** is a statement of **no effect**.It predicts that there will be **no difference or relationship**.

The **alternative hypothesis (H1)** is the alternative to the null hypothesis - it predicts **a difference or relationship** and can be **directional** or **non-directional.**

a-Directional hypothesis (also called a one-tailed hypothesis)

The researcher makes it clear what sort of difference or relationship that may be seen between the 2 conditions. The hypothesis may use words like **'less' 'more'**

'higher' or 'lower'.
For example, **People who** drink redbull will become **more** talkative than people who don't. Or… **People who** drink water will be **less** talkative than people who drink redbull.

b-Non directional hypotheses (also known as a two-tailed hypothesis)

Non-directional hypotheses are used when there has been **no previous research to suggest what direction the research will go in or the previous findings have been contradictory**.
Therefore, the researcher simply states there '*will be a difference'* or '*there will be a relationship'* between the 2 conditions. The direction of the outcome is not mentioned.
For example,
There will be a difference in talkativeness of people who drink redbull compared with people who drink water.

How to write an experimental hypothesis:
In order to write a hypothesis there are a few factors you need to be clear on

before you can begin.
1. What are the IV and the DV?
2. How is the IV manipulated e.g. what are the levels of the IV
3. How has the DV been measured exactly? e.g. how has it been operationalised?
4. Should the hypothesis be one tailed or two tailed?
5. Write your hypothesis- Put it all together!

Worked example:
The aim is to investigate whether a new drug (axocalm) reduces anxiety in patients with phobias. No previous research has been conducted on the effectiveness of this drug.
Step 1:
Identify the DV- what is being measured? The answer is anxiety.
Identify the IV- what is being manipulated? The answer is whether they are given the drug or not.
Step 2:
In order to test the effect of the IV we need different experimental conditions. If we simply gave some participants the drug, how would we know if it reduced their anxiety? We need a comparison. We could either:

- Compare participants anxiety levels before and after talking the drug
- Compare two groups of participants- those who take the drug and those who do not take the drug

Step 3:

Operationalise the DV- how exactly is anxiety being measured?

In this example, they have not specified how anxiety is measured so we need to come up with a sensible way to measure anxiety e.g. a self report scale.

"On a scale of 1-10 (1=not anxious at all and 10= highly anxious) how do you feel now?"

Step 4:

Identify from the information you have been given if you should write a one-tailed or two-tailed hypothesis.

In this case, they have said that no previous research has been conducted so that informs us that we should write a non-directional (two tailed) hypothesis.

Step 5:

Put all of this information together into a written testable statement.

Below is an example of a template you can use to write nearly every non-directional hypothesis:

There will be a difference in _____**(DV),** measured by _____ (**operationalised DV)** for participants who _____ (**IV - condition 1)**compared to those who _____(**IV -condition 2).**

Writing a directional (one-tailed) hypothesis:

Follow steps 1-3, then you will identify in step 4 that previous research has been conducted that has demonstrated the direction the researcher is likely to go in e.g. the drug does reduce anxiety.

You will have to make sure you include in your answer which group will be more/less anxious.

Template to use for directional hypotheses:

Participants who _____ **(IV - cond.1)** will be **more/less** _____ (**operationalised DV**) than participants who _____ **(IV -cond. 2)**.

Writing correlational hypotheses

The difference when writing a correlational hypothesis is simple.

We are no longer investigating a difference between two conditions, like in an experiment, but we are looking at a **relationship between two co-variables**.

There is no IV or DV in a correlation.

Correlational hypotheses **can still be directional or non-directional.**

The Co-variables must still be clearly operationalised.

Worked example:

The aim is to investigate whether there is a correlation between the price of chocolate and how tasty it is.

Template:

There will be a correlation between _____(co variable 1) and _____(co variable 2).

Non directional example- **There will be a correlation** between the price of a chocolate bar and its tastiness rating (out of 20).

Directional example - There will be a **positive/negative correlation** between the price of a chocolate bar and its tastiness rating (out of 20).

NB: Notice that when you write a directional correlational hypothesis you predict whether the correlation between the co-variables will be positive or negative.