



## Lesson 2: Research methods 7.1 Experimental method

<b>Learning objective</b>	To gain knowledge and understanding of experimental methods
<b>Lesson objectives</b>	By the end of the lesson, learners will be able to: <ul style="list-style-type: none"> <li>• Define experimental design</li> <li>• Explain repeated measures and independent measures</li> <li>• Explain counterbalancing and random allocation</li> <li>• Apply knowledge of the experimental design to novel scenarios</li> </ul>
<b>Vocabulary</b>	<p><b>Experimental design:</b> a way of assigning participants to different conditions or levels in an experiment</p> <p><b>Independent measures:</b> different participants take part in each condition of an experiment; participants experience only one of the levels of the independent variable</p> <p><b>Repeated measures:</b> the same participants take part in each condition of an experiment; participants experience all of the levels of the independent variable</p> <p><b>Random allocation:</b> The assignment of participants to different conditions in an experiment, so that each participant has an equal chance of being assigned to any particular condition</p> <p><b>Counterbalancing:</b> changing the order in which participants experience different conditions, to reduce the impact of extraneous variables in an experiment</p>
<b>Previous learning</b>	Learners have been introduced to the concept of experiments, as well as independent and dependent variables.

### Plan

Activities		Resources
<b>Beginning (5 mins)</b>	Learners complete the starter activity on participant variables.	Experimental designs infographic (slides 2 and 3):
<b>Middle (50 mins)</b>	<ul style="list-style-type: none"> <li>• Discuss the results of the starter activity, exploring the effect of participant variables on experiments.</li> </ul>	

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	<ul style="list-style-type: none"><li>• Define experimental design for learners' notes / glossaries. Share the infographic slide to illustrate the two types of experimental design.</li><li>• Provide definitions of independent measures and random allocation. Discuss the importance of random allocation in this experimental design.</li><li>• Learners can work in pairs to answer the questions on random allocation.</li><li>• Provide definitions of repeated measures and random allocation. Discuss the importance of counterbalancing in this experimental design.</li></ul>	<a href="https://docs.google.com/presentation/d/1OW69y5h4xxvjHb7HM4RWeJRrQLV0NBBSaNcm3jrxsvc/edit?usp=sharing">https://docs.google.com/presentation/d/1OW69y5h4xxvjHb7HM4RWeJRrQLV0NBBSaNcm3jrxsvc/edit?usp=sharing</a>
<b>End (5 mins)</b>	Learners complete the plenary task to apply their knowledge of counterbalancing to a novel scenario.	

### Reflection and evaluation

#### Reflection:

#### Summary evaluation:

What two things went really well? (Consider both teaching and learning.)

- 1.
- 2.

What two things would have improved the lesson? (Consider both teaching and learning.)

- 1.
- 2.

What have I learned from this lesson about the class or individuals that will inform my next lesson?



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