

Exercise walk-through

2.1

Research Skills

GAC Psychology

You must be able to

- distinguish a hypothesis from a null hypothesis
- compare independent-groups and repeated-measures designs
- explain random allocation and counterbalancing

1

The method

Method — Choose a design before collecting data

A **hypothesis** predicts an effect; a **null hypothesis** 零假设 predicts no effect.

Both are written before data collection.

Independent groups use different people in each condition, so use random allocation. Repeated measures use the same people, so use counterbalancing to reduce order, practice, or fatigue effects.

2

Practice

Practice 2.1 ■ 1 mark

State what a null hypothesis predicts.

Solution 2.1

Method: Choose a design before collecting data — p.4

Worked steps

- There is no effect or difference. **B1**

Practice 2.2 ■ 1 mark

State which design uses the same participants in every condition.

Solution 2.2

Method: Choose a design before collecting data — p.4

Worked steps

- Repeated measures. **B1**

Practice 2.3 ■ 2 marks

Explain why counterbalancing is useful in repeated measures.

Solution 2.3

Method: Choose a design before collecting data — p.4

Worked steps

- It changes the order of conditions across participants. **B1**
- This reduces practice or fatigue effects being confused with the result. **A1**

3

Exam-style

Exam-style 3.1 ■ 4 marks

Compare independent-groups and repeated-measures designs for a study of revision music and memory.

Solution 3.1

Method: Choose a design before collecting data — p.4

Worked steps

- Independent groups uses different participants; repeated measures uses the same people. (B1) (A1)
- Independent groups avoids order effects but groups may differ before the study. (B1)
- Repeated measures controls participant differences but needs counterbalancing. (A1)

Exam-style 3.2 ■ 4 marks

Explain why an honest null result can still be valuable in psychological research.

Solution 3.2

Worked steps

- It reports what the evidence actually showed. **B1**
- It can show that an expected effect was not supported under the tested conditions. **A1**
- It prevents researchers changing analysis just to find a result. **A1**
- This supports honest, reproducible science. **B1**