

2.1 Research design and hypotheses

Name: _____ Class: _____ Date: _____

Total: 12 marks

KEY WORDS hypothesis 假设 • null hypothesis 零假设 • independent groups 组间设计
• repeated measures 组内设计

Objective

Choose and justify an ethical, controlled psychological research design.

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 Worked examples

■ 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

2.1 State what a null hypothesis predicts. [1]

2.2 State which design uses the same participants in every condition. [1]

2.3 Explain why counterbalancing is useful in repeated measures. [2]

3 Exam-style questions

3.1 Compare independent-groups and repeated-measures designs for a study of revision music and memory. [4]

3.2 Explain why an honest null result can still be valuable in psychological research. [4]

Solutions

2.1

- There is no effect or difference.

2.2

- Repeated measures.

2.3

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

3.1

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

3.2

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