7.7 Experimental Designs: Repeated Measures, Independent Groups and Matched Pairs: 10-minute Pack

AQA 7182 · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions.

1 Identify one acceptable method of random allocation the researchers could have used and state why reporting the method matters.

(Total for Question 1 is 2 marks)

2 Identify two statistical advantages of switching to a repeated measures design in this situation, and explain why each matters for the analysis.

(Total for Question 2 is 4 marks)

3 Identify one potential problem caused by imperfect matching in matched pairs, and outline one way the researcher could check whether imperfect matching has affected the results.

(Total for Question 3 is 3 marks)

© Revision Library | revisionlibrary.co.uk

Mark scheme · 7.7 Experimental Designs: Repeated Measures, Independent Groups and Matched Pairs: 10-minute Pack

Question 1

identifies an acceptable method, e.g. using a random number generator, drawing names from a hat, or coin toss oe	**B1**
states why reporting matters, e.g. allows readers to judge whether allocation was truly random and assess risk of bias, aiding transparency and replicability oe	**B1**

Answer: They could have used a random number generator or coin toss to allocate participants. Reporting the method matters so readers can judge whether allocation was truly random, assess risk of bias, and replicate the method.

Question 2

identifies statistical advantage, e.g. greater statistical power with the same number of participants because participant variables are controlled oe	**M1**
explains that with higher power there is a greater chance of detecting a true effect, reducing the likelihood of a Type II error oe	**A1**
identifies another relevant advantage, e.g. fewer participants are needed to achieve the same power compared with independent groups oe	**M1**
explains why this matters practically, e.g. useful when participant recruitment is difficult or expensive oe	**A1**

Answer: Statistical advantage: repeated measures gives greater statistical power because participant variables are controlled, increasing the chance of detecting a true effect and reducing Type II error risk. Also it requires fewer participants for the same power, useful when recruitment is difficult.

Question 3

identifies problem, e.g. residual differences between paired participants could act as confounding participant variables oe	**M1**
explains consequence, e.g. apparent differences between conditions may be due to unmatched characteristics rather than the IV oe	**A1**
outlines a check, e.g. compare pre test/baseline scores statistically between the two groups or run an analysis of covariance controlling for the unmatched variable oe	**A1**

Answer: Problem: imperfect matching leaves residual participant differences that can confound results, so differences may reflect these unmatched traits rather than the IV. Check by statistically comparing baseline scores between the two groups or using an analysis that controls for the unmatched variable, such as ANCOVA, to see if the effect remains.

© Revision Library | revisionlibrary.co.uk