

psych/logic

THE IMPORTANCE OF RESEARCH METHODS & HOW TO ANSWER 'DESIGN A STUDY' RESEARCH METHODS QUESTIONS

Whereas all the other A-level topics carry 24 marks each and are supposed to be completed in 30 minutes in the exam, Research Methods on paper 2 has 48 marks attached to it and 60 minutes in the exam.

However, Research Methods questions also come up sprinkled throughout unit 1 and unit 3 so in fact Research Methods is ***more than twice as important as any other topic and is the key to you doing really well.***

One of the most difficult types of Research Methods questions are ones where you are asked to design a study. These are often worth 12-marks.

For example, in June 2017, the last question on the paper was

Design an observational study to investigate how people spend their time at the gym. In your answer you will be awarded credit for providing appropriate details of:

- *type of observation with justification*
- *operationalised behavioural categories*
- *use of time and/or event sampling with justification*
- *how reliability of data collection could be assessed.*

[12 marks]

It can be quite hard to score full marks on these questions and it is easy to make mistakes. However, by reading the question carefully, doing what you are asked, and breaking things down into chunks, the question becomes a lot more manageable.

For marks in the top band (10-12 out of 12) you will need to address all 4 bullet-point.

A common mistake is for students to start describing things which they are not asked to describe. For example, in the above example you are not asked to write about how you would gather a sample of participants, so if you did write this you wouldn't be awarded any marks.

It may be a good idea to plan out your answer for a few minutes.

For example,

- *Type of observation: overt or covert, participant or non-participant and explain why this is suitable – what advantages would it give. Covert non-participant would mean there were high levels of ecological validity and no demand characteristics.*
- *Operationalised behaviour categories: state 4 or 5 behaviours you would measure: e.g. how long an individual spent exercising on a piece of gym equipment, how long an individual spent talking to someone else, how long an individual rested, etc. All of these can be measured in minutes & seconds.*

- *Time and/or event sampling. Use 1 – I suggest event sampling. Every time an individual engages in an activity we record their behaviour: e.g. lifting weights. Justification is that we are recording all behaviours all individuals in the gym engage in, therefore, we get a valid picture of how often the individuals are engaging in the different behaviours we are measuring.*
- *Reliability of data collection: inter-rater reliability. Have 2 or more observers recording data separately so that they compare their data to ensure they are categorising and recording observations in the same way as each other. Their separate recordings can be analysed using a Spearman's test to see if they're positively correlated.*

FULL WORKED EXAMPLE #1

Design an experiment to investigate the effect of indoor plants on mood in office workers. For your measure of mood, you should devise a measure that would give data suitable for testing at the ordinal level of measurement.

In your answer you should provide details of:

- Design – include reference to the experimental design, variables and controls
- Materials/Apparatus – describe any special materials required
- Data analysis that could be used – include reference to descriptive and inferential analysis.

Justify your choices. (12 marks)

General guidance – it must be an experiment, data produced must be at the ordinal level, you must cover all 3 bullet-points... For 12 marks, you should write for 15 minutes so they expect lots of depth and detail but do not go off track: for example, you are not asked to give details of sampling techniques... Of particular importance is that there must be sufficient detail for the study to be replicated by someone reading your answer.

Answer.

"This experiment would use an independent groups design where 2 groups of 30 office workers in 2 separate buildings would be compared. The IV would be the presence of indoor plants in 1 of the offices and the absence of plants in the other office. The DV would be office workers mood. Offices would be chosen which were open-plan and contained 30 workers each. The two groups of workers would work in the same occupation: for example, journalism (to eliminate differences in job as a potential extraneous variable and workers in the office chosen to contain plants would be pre-tested to ensure none of the workers were averse to or allergic to plants (to eliminate this as an extraneous variable). Anyone who was averse to or allergic to plants would be removed from the study. The DV would be operationalised by constructing a closed-ended questionnaire composed of 20 questions asking participants about mood with 5 answers for each question ranging from 1 (strongly disagree) to 5 (strongly agree). Questions would be phrased so that 'strongly agree' answers indicated a positive mood. An example of a question is: 'When you wake up in the morning do you generally feel happy and content?' This questionnaire would be given to all office workers at the start of the study so that they all received a mood score of $x/100$.

The study would continue for 2 months. In the 'plant' condition, the office workers' office would be filled with a variety of plants. These would be well-cared for by someone other than the office workers. This would eliminate dead/ugly plants as a potential extraneous variable. After 2 months, all office workers would take the mood questionnaire again and the positive or negative difference in each individual's mood score would be calculated. This would produce ordinal data: for example, office worker number 1 in the plant condition started with a mood score of 50/100 and ended with a mood score of 65/100, therefore, their mood increase/decrease score is +15.

Data could be analysed in various ways. The mean mood score for both groups could be calculated and compared along with a range and SD. Data could also be analysed using the Mann-Whitney U test as the study is a test of difference using an independent groups design with ordinal data.

FULL WORKED EXAMPLE #2

The psychologist noticed that female and male participants seemed to have responded rather differently to the treatment.

She decided to test the following hypothesis:

Female patients with an eating disorder will show greater improvement in their symptoms after treatment with the new therapy than male patients.

She used a new set of participants and, this time, used self-report questionnaires instead of interviews with a therapist.

Imagine that you are the psychologist and are writing up the report of the study.

Write an appropriate methods section which includes reasonable detail of design, participants, materials and procedure. Make sure that there is enough detail to allow another researcher to carry out this study in the future. (10 marks)

Note: only asks for a Methods section.

Answer.

“30 male and 30 female participants between the ages of 18-35 would be volunteer sampled from eating disorder clinics. Only participants who were not currently receiving therapy or medical treatments would be used in the study. Participants would receive a consent form giving details of what they would undergo in the study and would be informed of their right to withdraw and confidentiality of data.

An independent groups design would be used as males and females are the 2 conditions of the IV (gender). The DV would be self-rated eating disorder symptoms using a self-report questionnaire. At the start of the study all participants would complete a self-report questionnaire designed by the psychologist which asked closed-ended questions regarding participant’s perception of their own symptoms. This questionnaire would be designed to give an overall score of x/100. Each participants score would be recorded.

All participants would then receive an equal amount of therapy – 3 hours per week – for 6 weeks. The therapists delivering the therapy would be instructed to try to make their therapy sessions as standardised as possible so that all participants experienced the same type and intensity of therapy. Once the 6 weeks’ therapy was complete all participants would complete the questionnaire again and scores would be totaled. Participants would then be debriefed, told about the aims of the study, asked if they wanted to withdraw their data or if they had any questions, and then thanked for their time.”