

# The Important of Research Methods and how to Answer 'Design a Study' Research Methods Questions

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by [PsychLogic](#), published 2018

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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:

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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.

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## A Full Example

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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.”

AO1

Demonstrate knowledge

(a) demonstrate knowledge and understanding of scientific ideas, processes, techniques and procedures.

(b) show a knowledge and understanding of psychological theories, terminology, concepts, studies and methods.

## AO2

### Application of knowledge

(a) apply knowledge and understanding of scientific ideas, processes, techniques and procedures:

- in a theoretical context
- in a practical context
- when handling qualitative data
- when handling quantitative data

This skill area tests knowledge of research design and data analysis, and applying theoretical understanding of psychology to everyday/real-life examples.

## AO3

### Analyse, interpret and evaluate

(a) analyse, interpret and evaluate scientific information, ideas and evidence, including in relation to issues, to:

- make judgements and reach conclusions
- develop and refine practical design and procedures.

### Examples of how you can score AO3 marks

Whether or not theories are supported or refuted by valid research evidence. After describing a theory go on to describe a piece of research evidence saying, 'X's study supports/refutes this theory...' and then describe the research study.

Contextualising how the topic in question relates to broader debates and approaches in Psychology.

For example, would they agree or disagree with a theory or the findings of the study?

Animal Research - This raises the issue of whether it's morally and/or scientifically right to use animals.

The main criterion is that benefits must outweigh costs.

Animal research also raises the issue of extrapolation. Can we generalize from studies on animals to humans as their anatomy & physiology is different from humans?

General criticisms and/or strengths of theories and studies.

E.g. 'Bandura's Bobo Doll studies are laboratory experiments and therefore criticisable on the grounds of lacking ecological validity'.

To gain marks for criticising study's methodologies the criticism must be contextualised: i.e. say why this is a problem in this particular study.

'Therefore, the violence the children witnessed was on television and was against a doll not a human'.

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