

AQA Psychology for A Level and AS: Practicals Workbook

Exam-style question answers

PLEASE NOTE: This document contains suggested model answers that would achieve a good mark if provided by a student in an exam. They are designed to help guide and instruct you but should not be considered definitive.

Section 1: Starting out

Research methods 1: The basics, p.7

1. Using hands when talking is actual behaviour, it can be observed and recorded by the psychologist. A self-report questionnaire only measures what people say/believe they would do with their hands. The issue is that the questionnaire answers may not reflect what really happens whereas the observation is of what people actually do.

2. In a questionnaire people can say whether what they feel, e.g. depressed or happy. But these feelings are not clearly expressed in observable behaviours.

3. Hand movements – politicians might move their hands in time with their speaking, e.g. pointing a finger or thumping a fist to emphasise certain words.

Eye contact – politicians might make eye contact at times with individual members of the audience to make them feel they are getting special attention.

Research methods 2: Observation design, p.13

1.

- Corners of the mouth pulled upwards so mouth forms a 'U' shape (a smile). This expression often expresses a person's internal feelings of happiness.
- Eyebrows raised towards the hairline. This is often used in social communication to express surprise or a greeting.

2. The researcher records every time the participant shows a particular behaviour, e.g. the number of times participants turn up the corners of their mouth, or raises their eyebrows.

3. Because every instance is recorded, the data will represent the occasions when a participant displays the target expressions which is not guaranteed with time sampling.

4. One reason was to see if it was possible to record every instance of the chosen facial expressions. If not, the design would be modified, e.g. using time sampling instead.

Research methods 3: Questionnaire design, p.19

1. Self-report is any method where the person provides information about their own behaviours, thoughts, feelings, etc., e.g. by responding to items on a questionnaire.

2. Describe how much control you feel you have over your life.
3. Rating scale. On a scale of 1 (no control at all) to 5 (complete control), how much control do you generally have over your life?
4. People just have to choose from alternative responses, so closed questions are easier to use for people who find it hard to put into their own words how much/little control they feel they have.

Research methods 4: The experimental method, p.25

1. To investigate whether owning a pet reduces the owners' levels of stress.
2. People who own pets give a lower average stress rating on the questionnaire than people who do not own pets.
3. It makes measurement of variables more objective. Without operationalisation, different researchers would have different interpretations of what the research variables are and how they are measured.
4. The researcher has identified past research showing that owning a pet does reduce stress in owners which therefore suggests the expected direction.

Research methods 5: Sampling techniques, p.31

1. Employees in all offices across the company.
2. Volunteer sampling.
3. To minimise the amount of time/effort required to get a sample. This is because it would involve just sending emails out and then waiting for employees to volunteer.
4. Random sampling. This reduces the chances of getting a biased sample of employees whereas volunteer sampling would tend to recruit the most willing. Therefore random sampling is likely to be more representative of the company.

Research methods 6: Ethical issues, p.39

1. She could explain the aims of the study to each patient in the waiting room at the time and ask them to sign a form giving their consent to be observed.

She could obtain presumptive consent by identifying a group of people who have previous experience of being patients in a doctors' waiting room. She would explain the study to them and ask if they would consent 'in principle' (although they would not actually take part).

2. Confidentiality is a potential issue. This could be dealt with by telling all participants in the waiting room that their data would be stored without any means of identifying them.

Research methods 7: Correlation, p.45

1. There is a correlation between a student's score for perceived social support and their GCSE exam results score.
2. A correlational study is a more ethical alternative to an experiment for research on social support. This is because the teacher does not have to manipulate the amount of social support the students receive, but it is just measured.
3. The teacher did not manipulate social support as an independent variable. Therefore it is not possible to infer a cause and effect link between social support and GCSE scores.

Research methods 8: Meta-analysis and case studies, p.51

1. He may have wanted to calculate an overall effect size to see if doing an experiment might be worthwhile. If the effect size was low, it might not be worth pursuing the research.
2. A meta-analysis only includes published studies which tend to be the studies that had significant results. This means the meta-analysis does not reflect all research on the topic.
3. A case study uses several methods so would produce rich and detailed qualitative data about the role of cues (e.g. the effect of different types of cue) as well as quantitative data. But data from an experiment would only be quantitative and narrowly focused.

Research methods 9: Content and thematic analysis, p.57

1. The researchers would start by gathering their source material (social media posts). Then they identify important categories in the source material, e.g. different kinds of negative content such as insults. The researchers give each category a code. The researchers then read through the posts again, counting and recording every instance of each category to get quantitative data.
2. The two methods differ in the type of data they produce. Content analysis produces quantitative data (counting instances) whereas thematic analysis produces qualitative data (themes).
3. The researchers would first create transcripts of the interviews. They would then create codes to initially analyse the transcripts. Finally, they would review the transcripts, using the codes to identify emergent themes, e.g. reasons for posting negative comments.

Research methods 10: Reporting investigations, p.63

1. One reason was to see if it was practically possible for one observer to record every food choice in the canteen over that period of time. If not, the design would be modified to include more observers or narrow the focus of the observation.
2. Introduction.
3. Ogden, J. (2011) The psychology of eating. Chichester: Wiley-Blackwell.

Section 2: Refining your understanding

Research methods 11: Experimental design, p.73

1. Independent groups. This avoids order effects because, if you did this study as repeated measures, the participants would already have answered questions about the video so they might be better the second time around when answering a different kind of interview – or they might be worse because they were bored.
2. Participants are matched on variables that may affect the DV, with each person from the pairs placed in different conditions of the IV.
3. Matching participants would have controlled potential participant variables. This would mean the psychologist could conclude that any differences in correct recall between the groups would be due to differences in the interview techniques and not to differences between participants.

Research methods 12: Experimental controls, p.79

1. Order effect because each participant throws the paper twice.
2. The participants will perform better on the second throw because they have had practice with the first, artificially improving the 'imagining' throw. This could be controlled by using a different design such as independent groups where participants are divided into two groups, one does the 'imagining' throw and the other does the 'non-imagining' throw.
3. Give each word a number from 1 to 40. Select an online random number generator. The first 20 numbers identify the words for group 1, the rest of the words go in group 2.
4. The researcher cannot influence the grouping of the words, so the lists should be equally easy/hard to remember (e.g. similar number of syllables), which avoids researcher bias.

Research methods 13: Investigator effects, p.85

1. When the second group of participants did the questionnaire they would have been more suspicious about the questions and **tried** to avoid appearing rebellious. Therefore, their responses lacked validity.
2. The researcher could have tested all the students at the same time and then there would be no rumours about the study.
3. The psychologist might have encouraged students to feel rebellious before they answered the questionnaire, for example she could have told them how important it is to stand up for your rights. Then the students might have been more likely to feel positive about refusing to conform, which would affect their answers.

Research methods 14: Types of experiment, p.91

1. The psychologist would have high control over potential extraneous variables. For example, showing a film of the event in exactly same room with no distractions so all participants have a standardised experience of the procedure.
2. The psychologist could arrange for a staged crime to be witnessed by people in an everyday setting, e.g. a shop. They could then give witnesses an opportunity to discuss the event without being aware it is part of a research study.
3. The witnesses are less likely to be aware they are participating in a study than in a lab situation where they might try to guess the purpose of the study. This means their eyewitness accounts are less likely to be affected by demand characteristics or investigator effects.

Research methods 15: More types of sampling, p.97

1. Obtain a list of the names of all people at the university, assigning each person a number from 1 to say 1000. Then use an online random number generator to produce 100 numbers from a maximum of 1000 and select the corresponding names on the list to be your participants.
2. Stratified sampling. This technique would ensure that different age groups would be represented in the sample in proportion to their presence in the university population. This would make the findings more generalisable.
3. Obtain a list of the names all the people at the university. Identify age groups and the percentage of people in each age group at the university, e.g. 60% are 18-24 years, 8% are 25-31 years, etc. Use a random method (e.g. online random number generator) to select the required number from each age group based on these proportions.

Research methods 16: Types of observation, p.105

1. Child smiling at adult. Adult talking to child.
2. The psychologist would select a time frame, e.g. 2 minutes. Every 2 minutes, a record was made of any instances of the interactions represented in the behavioural categories, e.g. record if a child was smiling at an adult at this point.
3. When people are in their usual environment they will behave as they typically do, therefore the observation will record typical everyday behaviour.
4. If the observation was overt it would be ethically more acceptable. Even though people in a restaurant are aware that other customers are watching their behaviour they might object to someone recording what they are doing and saying.

Research methods 17: Types of self-report, p.111

1. Unstructured, because this would allow the students to give their responses about gambling in their own words. This means you are more likely to gather unexpected information. About attitudes towards gambling.

2. The additional questions were added to reduce demand characteristics. They distracted the students from working out that the focus of the study was on gambling. Therefore the students would be less likely to give 'dishonest' answers to be helpful.

3. Gambling is a sensitive topic, so the participants would probably feel more comfortable and willing to respond truthfully to items on a questionnaire than to an interviewer in a face-to-face situation.

Research methods 18: Types of data, p.117

1. It provides rich detailed information to give the psychologist a deeper understanding of the causes of stress at work, e.g. more types of stress than she might have thought of herself.

2. The data is in the form of words and therefore the psychologist's analysis may be subjective, e.g. deciding which causes of stress the employees are referring to. This would make it harder for her to draw conclusions about what causes stress at work.

3. Primary data refers to information collected first-hand which is specific to the aims of the study, as in the case of the data collected directly from participants using interviews. Secondary data is data that has been collected by someone else and then used by a third party, as in the case of using the pre-existing information from the human resources department. This was also data from the employees but it was not collected by the researcher and therefore is secondary.

Research methods 19: Reliability, p.123

1. Two observers watch the same group solving problems, using the same techniques. They record their observations independently. The two sets of data are then compared using an appropriate statistical test of correlation. A correlation coefficient above +0.80 indicates that the observations are similar, i.e. good reliability.

2. Give the test to the same group of participants to complete on two separate occasions, about one month apart. Calculate the correlation coefficient between the two sets of data – above +0.8 indicates the responses are similar over time, i.e. good test-retest reliability.

3. The psychologists should review their questions and make sure they are not ambiguous or unclear – people might have given different answers the second time around because the questions lacked clarity.

Research methods 20: Validity, p.129

1. Concurrent validity. The researcher will have used a statistical test to find the correlation between scores on the new questionnaires and on the F-scale. The correlation coefficient may have been a low positive or even negative.

2. They could remove or rewrite any items that are not closely related to authoritarian personality. They could also rewrite items that are unclear, ambiguous or complicated, e.g. double-barrelled. Because an authoritarian personality is not socially desirable, the researchers could incorporate a lie scale to check participants are responding truthfully.

Research methods 21: Features of science, p.135

1. Replicability – the therapy is delivered in a standardised way, so the study can be replicated by other researchers to confirm the validity of the findings.

Theory construction – if the therapy is effective, the findings could contribute to an explanation or theory of depression in terms of cognitive causes, e.g. negative thinking.

2. Findings of research into depression symptoms could produce improvements in psychological treatments. This could help people to manage their mental health so they can get and keep jobs with less time off. This would reduce costs (e.g. to the NHS) and increase individual productivity, both benefitting the economy.

Section 3: Mathematical requirements and statistics

Maths 1: Parts of a whole, p.145

1.

36 participants

60% of participants are over 26 years = $60/100 = 6/10 = 0.6$

$0.6 \times 60 = 36$

2.

The decrease is $(18 - 14.5) / 18 = 0.19444$

To calculate the percentage we multiply by 100 = 19.444%

2 decimal places = 19.44 decrease

3.

Number in therapy group who improved = 24

Number in written group who improved = 10

Ratio is 24:10

(Simplified this is 12:5)

4.

Total participants in written group = 30

Number in written group who did not improve = 20

The fraction of participants who did not improve is 20 out of 30

As a percentage we multiple $20/30 \times 100 = 66.67\%$

Maths 2: Ways to present long numbers, p.147

1.

To estimate, we round each data item up or down to the nearest 10:

Individualist = $20 + 50 + 30 + 90 + 40 + 20 + 10 + 50 + 140 + 70 + 110 + 70 = 700$

Collectivist = $30 + 20 + 10 + 70 + 50 + 60 + 20 + 20 + 10 = 290$

2.

The estimated total for the collectivist group is 290

The estimated total number of individuals is 10

$$290 / 10 = 29$$

The answer, to 1 significant figure, is 30

3. >

4.

$$1.35 \times 10^{15}$$

$$7.53 \times 10^{-10}$$

Maths 3: Descriptive statistics, p.149

1. The means suggest that Revision Method B is more effective than Revision Method A. This is because the mean value of 12.8 is higher than 8.5.
2. The standard deviation suggests that Revision Method B was very effective for some students who used it, but much less effective for others. This is because the spread of scores was relatively wide.
3. The median. This is because there is a large anomalous/extreme result in the data (17). The median is less affected by this result than the mean, so it would be more representative of the views of the participants as a whole.

Maths 4: Descriptive statistics (continued), p.151

1. x-axis: Obedient participants (Group A), Disobedient participants (Group B)

y-axis: Mean score on F-scale

2. The data is not continuous because the scale along the x-axis is categorical. The groups A and B are distinct groups that could appear in any order on the x-axis.
3. Group A scores indicate a positively skewed distribution of authoritarianism scores because mean > median > mode.

Group B scores indicate a normal (or near-normal) distribution because the mean, median and mode are very similar.

Maths 5: Inferential statistics, p.153

1. The hypothesis is directional (one-tailed test).

There is one no difference score, therefore $N = 12 - 1 = 11$

Level of significance = 0.01 (1%)

Therefore the critical value is 1

2. The calculated value of S (4) is greater than the critical value (1).

For significance the calculated value of S must be equal to or less than the critical value.

This means that the result is not significant, so we must accept the null hypothesis.

3. A Type II error occurs when the psychologist accepts there is no difference in performance before and after lunch (null hypothesis) even though performance before lunch is better (the alternative hypothesis) is correct.