Study Psychology

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A-Level Psychology

Practice Paper

MARK SCHEME

This is a practice paper intended for revision following the **OCR** specification.

Paper 1: Research Methods

2 hours

Section A: Multiple Choice

1. A

2. B

3. B

4. C

5. A

6. B

7. B

8. B

9. D

10. a) C

10. b) B

11. A

12. C

13. A

14. A

15. A

16. D

17. C

18. D

19. A

20. B

Section B: Research Design and Response

21. Two marks for identifying one strength of using a structured observation in this study, with some elaboration in context. Examples include; replication/ reliability from control or standardised procedures, quantitative data collection.

For example: ***One strength of using a structured observation is they allow for replication as the procedures are standardised. This makes them a reliable method to use. In this study the psychologist used the same behavioural categories to observe all eight children, so they could reliably see which behaviours were displayed.***

22. Four marks (2+2) for identifying and explaining two ethical issues, in context of this observation. Examples include; informed consent from parents, confidentiality, right to withdraw, protection from harm, debriefing.

For example: ***One ethical issue which would need to be considered in this observation is informed consent, where information is given about the study and people agree to take part. This is particularly important when children are participants. In this study the psychologist would need to gain parental consent from the parents of the children at the pre-school as they are only 3-4 years old and cannot give consent themselves. Another ethical issue is protection from harm which states that participants should be protected from physical or mental harm throughout the study. In this observation, the children would be in their natural environment with the pre-school teachers so should always be protected from harm, however, the psychologists would need to ensure the observation method does not cause any distress to the children.***

23. Four marks (2+2) for identifying two sub-categories for co-operation and explaining how these could be operationalised in this study. Examples include; co-operative/ mutual play, sharing toys, playing nicely together, helping each other.

For example: ***One sub-category to assess the behavioural criteria of 'co-operation' in this observation could be to count the number of times each child is seen to 'share a toy with another child'. This would receive one tally in the behavioural chart when displayed by one child at a time. Another sub-category could be to count the number of times each child is seen to engage in 'mutual play'. This could be recorded when one child is seen actively engaged in two-way play with another child. This would also receive one tally in the behavioural chart when it is shown by a single child.***

24. Two marks for outlining one control the psychologist would need to consider, with elaboration in the context of this observation. Examples include; time, standardised procedures, observation booth, noise/ distraction.

For example: ***One control the psychologist would need to consider in this observation is to reduce the risk of extraneous factors so the behaviour of the children is a true measure of how they would normally act in pre-school. In this observation the psychologist built a covert observation booth in the corner of the room, so children would be unaware of their presence.***

25. Two marks to explain why it was necessary for the psychologist to create a covert observation booth in this study. Examples include; demand characteristics and ethical concerns.

For example: ***One reason why it would be necessary for the psychologist to build a covert observation booth in the playroom is to reduce the risk of demand characteristics. This is where people change their behaviour as a result of the researcher's presence or instructions. In this study the children may have acted differently if they had seen the psychologist openly taking notes and watching their behaviour.***

26. <u>Six marks</u> (3+3) for identifying two weaknesses of using a structured observation in this study, with elaboration in context. Examples include; issues with internal validity or ecological validity, reliability, ethics, problems with behavioural categories or observer bias/ subjectivity.

For example: ***One weakness of conducting structured observations is the lack of internal validity. This is the extent to which the factors controlled in the observation can be said to be responsible for the outcome of the results. In this case the observation was carried out in a pre-school setting with a group of children under the age of 4 years. The psychologist would not be able to control any circumstances within the environment such as fighting or crying or disruption. This may affect their ability to record the information observed accurately as they could miss or misinterpret what they see. Another weakness is there may be a risk of observer bias, this is when the observer's own expectations or opinions may unintentionally influence what they observe, or how they record the data during the study. In this case, the psychologist is actively looking for specific behavioural categories which constitute pro-social behaviour, and their ideas of this may be subjective.***

27. Total of <u>15 marks</u> for all required features given in context to this study, with reference to experience from your practical investigation.

Level of response	Details of required features (RFs) included	Justification of decisions made	Reference to own practical work
Good 12-15 marks	**All 4** required features (RFs) addressed in context. **Accurate** and **detailed** knowledge and understanding of each feature in context. **Good** evidence of **application** of required features in context.	**Appropriate justification** of all decisions and *some* is contextualised. Well developed line of reasoning that is clear and logically structured.	**Explicit** reference to own practical work and clear links between own work and the planned research for each required feature, e.g. specific mention of aim or procedural features. For top band (good) 12 marks if just one RF linked, 13 marks if two, 14 marks if three and 15 if all four are linked If there is no explicit clear link between own practical work and *any* of the 4 required features caps the mark at 11 maximum. Overall mark **<u>Look at RF first:</u>** L4 Good – all 4 good (L4) in context L3 Reasonable – min 3 reasonable (L3) in context L2 Limited – min 2 limited (L2) in context or 3- 4 limited (L2) with no context L1 Basic – 1 basic (L1) (no context needed). **<u>THEN look at justifications:</u>** L4 Good – at least 2 reasonable (L3) AND at least 2 of the justifications are in context (does not have to be the reasonable ones) L3 Reasonable – at least 2 limited (L2) AND at least 1 of the justifications is in context. L2 Limited – at least 1 limited (L1) (no need for context) L1 Basic – no justification or basic justification
Reasonable 8-11 marks	At least **3 required features in context**. **Reasonably accurate** and **detailed** knowledge and understanding of each feature.	**Some** appropriate **justification** of decision related to required features (if no justification in context award 8 marks). There was a line of reasoning evident with some structure.	
Limited 4-7 marks	At least **two** of the required features addressed in context **<u>Limited application</u>** of required features **OR** three or all four required features referred to but in a limited way	**Attempt** to justify decision(s) but weak. Evidence of some structure, but weak.	
	<u>If one required feature addressed in detail and justified in context and explicit links made to own practical work award 4 marks.</u>		
Basic 1-3 marks	At least **one** of the required features addressed. **<u>Weak application</u>** of required features. **OR** more than one of the required features referred to but in a very brief and/or basic way.	**None**, or if present very weak.	

Must include: research hypothesis, sample/ sampling technique, operationalisation of behavioural categories, reference to inter-rater reliability.

For example: ***In this structured observation into pro-social behaviour in pre-school children, I would investigate gender differences. I would formulate a hypothesis which states there will be a significant difference between boys and girls and the number of prosocial behaviours they display in the 30 minute observation. This prediction expects a difference to be seen in the results but I do not know which group will show more pro-social behaviour. In my practical observation investigating the difference in healthy food choices between students and teachers, I predicted there would be a significant difference, with students selecting more unhealthy choices.***

In this observation I would select a sample of 10 children from a local primary school, year 1 class. As I am investigating gender differences I would need an equal number of boys and girls in the sample. I would use random sampling by placing all the names of the full class of year 1 boys into a hat and randomly selecting

5 participants and then repeat this process with the year 1 girls. This would ensure that all the children in year 1 had an equal chance of being selected in the final sample, which makes it a fair test. In my practical observation, I used opportunity sampling to gather my participants by taking anyone who entered the student canteen at the time of the observation. This method was quick and easy and took people who were accessible at the time. My sample was divided up naturally by the nature of the person; teacher or student. In this observation I would operationalise the behavioural categories for pro-social behaviour by pre-selecting the categories before the start. The tally chart would include examples such as helpful behaviour, sharing with others, being polite or being caring to others, and showing support to others. Every time one of the year 1 children display a behaviour this would be counted as one tally and recorded in the table. This method would be standardised to increase the reliability of the findings. In my practical observation I operationalised the behavioural categories by creating a tally chart which included healthy and unhealthy food sold in the student canteen. Every person who purchased items of food at the till, were recorded in the tally chart. One item of food was recorded as one tally mark. This would allow for easy replication.
In this observation I would ensure inter-rater reliability by having more than one observer record the behaviours of the year 1 children. Each observer would be given the same standardised tally chart and would use the same marking criteria for recording the behavioural categories. They would then have to agree on the criteria observed which would ensure consistency and make the results more reliable. In my practical observation, I did not have more than one observer so my study lacked inter-rater reliability. If I were to repeat my observation in the student canteen I would use two independent observers to ensure inter-rater reliability.

Section C: Data Analysis and Interpretation

28. **Three marks** for an appropriate alternate hypothesis for correlation. Both co-variables should be evident in the answer and should be in context of this study. A directional or non-directional statement can be written.
For example: ***It is predicted there will be a positive relationship between the number of hours students spend studying and their final exam GCSE grade scores.***

29. **Two marks** for stating the operationalised co-variables, one mark per variable in context of this study.
For example: ***V1 – the number of hours students spend revising the core subjects (English, Maths and Science) over the course of year 11. V2 – the total score taken from the GCSE grade profile calculated from the core subjects (max 27).***

30. a) **Three marks** to explain how the researcher would have used random sampling to gather the sample, in the context of this study. Reference to the year 11 student cohort and name generator (computer/ hat) is necessary.
For example: ***The researchers would need to take the names of all year 11 students completing their GSCE exams this year and place them in a hat/ name generator. They would then randomly select the first 30 students to make up the sample. These students would be selected to take part in the study into time spent on revision and GSCE success.***

b) Four marks (2+2) for identifying one strength and one weakness of using random sampling in this study, with elaboration in context. Examples include; cost effective, quick, easy, no researcher bias, equal chance for all in selection, poor representation, less generalisable.
For example: ***One strength of using random sampling in this study is that it is a quick and easy method with minimal cost. The researchers only need to gain a full list of the names of year 11 students and place them into a computerised name generator. This is relatively easy information to access from the school and removes any researcher bias. One weakness is there is a risk of poor representation in the final sample selected. In this study the researchers may get a sample of 30 year 11 students all with similar characteristics such as academic ability, which limits the generalisation of the results.***

31. a) Two marks to explain why a Spearman's ranked correlation coefficient test is appropriate in this study. Examples include; correlation/ test of association, ordinal data from two co-variables.
For example: ***A Spearman's ranked correlation coefficient test is appropriate for this study because it is looking for a relationship between the number of hours spent revising and the score on the GSCE profile and both of these variables are ordinal level data.***

b) Three marks for explaining the result of the correlation in this study using the calculated value of +0.821. Reference to the type of correlation and strength of correlation in context is necessary.
For example: ***The calculated value of +0.821 indicates there is a strong positive correlation between the number of hours year 11 students spent revising and their subsequent score on their GSCE profile for the three core subjects.***

c) Four marks for writing a correct significance statement using the probability level of 5% for a one-tailed test. Stating whether the result of the inferential test was significant using the critical value in the table for Spearman's ranked correlation coefficient test (critical value = 0.306). There must be a clear link back to the context in this study.
For example: ***The calculated value of the Spearman's test was 0.821 which is greater than the critical value of 0.306 (when p<0.05 for a one-tailed test, where N=30). Therefore this result is significant. This means there is a significant relationship between the number of hours year 11 students spent revising and their subsequent score on their GSCE profile for the three core subjects. Therefore, the alternate hypothesis can be accepted.***

32. Three marks to explain what p<0.05 means as part of the significance for the analysis in the data in the context of this study.
For example*: The probability noted as p<0.05 means there is a less than 5% probability that the results are due to chance. This implies the results are significant to a confidence of 95%. In this study it suggests that the alternate hypothesis can be accepted and the null hypothesis rejected. Therefore there is a significant relationship between the number of hours students spend revising and their score on their GCSE profile for English, Maths and Science.*

33. Four marks (2+2) for identifying one strength and one weakness of quantitative data in the context of this study. Examples include; reliability, easy to statistically analyse, quick/ easy to collect data, lacks validity.
For example: ***One strength of collecting quantitative data is it allows for statistical analysis as the data is numerical. This means that statistical tests can be used to see if the data is significant. In this study, the researchers could use the Spearman's rank correlation coefficient test to see if there was a relationship***

between the number of hours students spend revising and their score on their GCSE profile for English, Maths and Science. One weakness of collecting quantitative data is it lacks validity as it cannot offer any insight into the reasons behind the findings. In this study the researchers can see that there was a positive correlation between the two variables but they do not know the reasons why this relationship exists. This limits the holistic understanding of the factors affecting the overall success of students in their GCSE exams.

34. **Two marks** for outlining one problem with collecting the data for variable 2 via the student diaries. Examples include; subjectivity, low validity, issues with social desirability, ethics.
For example: ***One problem with collecting data from diaries is they are a form of self-report and may be subjective. The students in this study may have lied by exaggerating the number of hours they spent revising for their GCSE exams. This social desirability effect will lower the validity of the findings.***

35. a) **Three marks** for outlining one problem with conducting correlational research as shown in this study. Examples include; cause and effect; low validity, subjectivity, poor usefulness.
For example: ***One problem with conducting correlational research as shown in this study is that cause and effect cannot be inferred. This means the researchers have no way of knowing which variable affects which. They can see there is a relationship between number of hours they spent revising and subsequent GCSE scores but they do not know why or how the two variables are related. This limits the usefulness of the findings.***

b) **Two marks** for explaining why an interview may be a more valid method of data collection in this study. Examples include; qualitative data can be collected, opinions gathered, deeper insight/ understanding, more useful, has wider applications.
For example: ***Interviews may be a more valid way of collecting information from year 11 students as they can be more open in discussing and explaining how they revise for their exams and when they schedule their revision. This gives researchers a greater understanding of the reasons influencing the number of hours students spend revising for their exams. This has more practical applications and can help other students plan for success in their GCSE exams in the future.***

END OF PAPER

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