

# Markscheme

**May 2024**

**Psychology**

**Higher level**

**Paper 3**

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**Paper 3 markbands**

<b>Marks</b>	<b>Level descriptor</b>
<b>0</b>	<ul style="list-style-type: none"> <li>• The answer does not reach a standard described by the descriptors below.</li> </ul>
<b>1–3</b>	<ul style="list-style-type: none"> <li>• The question is misunderstood and the central issue is not identified correctly, resulting in a mostly irrelevant argument.</li> <li>• The response contains mostly inaccurate references to the approaches to research or these are irrelevant to the question.</li> <li>• The reference to the stimulus material relies heavily on direct quotations from the text.</li> </ul>
<b>4–6</b>	<ul style="list-style-type: none"> <li>• The question is understood, but only partially answered resulting in an argument of limited scope.</li> <li>• The response contains mostly accurate references to approaches to research which are linked explicitly to the question.</li> <li>• The response makes appropriate but limited use of the stimulus material.</li> </ul>
<b>7–9</b>	<ul style="list-style-type: none"> <li>• The question is understood and answered in a focused and effective manner with an accurate argument that addresses the requirements of the question.</li> <li>• The response contains accurate references to approaches to research with regard to the question, describing their strengths and limitations.</li> <li>• The response makes effective use of the stimulus material.</li> </ul>

1. (a) Identify the research method used and outline **two** characteristics of the method. **[3]**

*Award [1] for identification of correct research method.*

- Laboratory experiment (alternative acceptable terms: experiment, true experiment, randomized experiment, lab experiment, controlled experiment).

*Award [0] for field experiment, natural experiment, quasi experiment, field study.*

Answers related to an outline of characteristics of the method may include two of the following characteristics: **[1]** per relevant point. Maximum of **[2]**

- A lab experiment is carried out in a controlled setting, often but not always, a laboratory.
- A lab experiment investigates the effect that manipulating an independent variable (IV) has on a dependent variable (DV). (In this study, the IV was whether students were screen readers or paper readers and the DV was their scores on the two tests.)
- A lab experiment involves random allocation of participants to the experimental groups.
- A lab experiment is based on a hypothesis from which it can be predicted what will happen to the dependent variable when the independent variable is manipulated.
- A lab experiment involves at least two conditions, the experimental and the control conditions. (In this study the two conditions were “screen reading” and “paper reading.”)
- A lab experiment is highly controlled to avoid confounding/extraneous variables.
- A lab experiment is conducted in an artificial environment. This results in lower ecological validity than with other forms of experiment.
- The lab experiment can establish a cause-effect relationship between manipulation of the IV and its effect on the DV when the results are significant.

- (b) Describe the sampling method used in the study. **[3]**

*Award [1] for stating volunteer sampling (acceptable alternative: self-selected sample).*

*Description of the sampling method may include two of the following characteristics ([1] per relevant point. Maximum of [2]).*

*Award [0] for description of the sample rather than the sampling method.*

*Descriptions of the sampling method used in the study could include but are not limited to:*

- A volunteer sample is a non-probability sample, which means that participants are not chosen randomly from a target population.
- Participants are invited to take part/recruited through advertisements or posters, for example.
- Participants are self-selected because they willingly choose to take part of their own accord.
- It is easy to collect, convenient and not time consuming. It requires minimal effort for the researchers and is often used when it is not possible to collect a probability sample.
- Because participants are not selected randomly, there is a problem with representativeness.
- A volunteer sample suffers from self-selection bias. For example, participants may be more cooperative or enthusiastic than those who did not apply. It is unlikely therefore to be representative of a general population, and the findings cannot be easily generalized.

- (c) Suggest **one** alternative **or one** additional research method that could be used to investigate the aim of the original study, giving **one** reason for your choice. [3]

*Award [1] for naming an additional or alternative research method and up to [2] for reason with rationale.*

*The candidate may choose to write about an alternative or an additional method. Either approach to answering the question is acceptable. The rationale may differ depending on which is chosen.*

*If more than one method is suggested, only the first method can be considered for credit.*

Suitable alternative or additional research methods and reasons (with rationale) could be, but are not limited to:

**Semi-structured interviews:**

- The semi-structured interview is flexible as the interview guide has open-ended questions in combination with closed questions. This gives the participants the possibility to go in-depth with their views and they can also be invited to elaborate on specific points.
- Semi-structured interviews are informal and conversational in nature. Using this research method could compensate for the limitations of the experiment – such as low ecological validity.
- The semi-structured interview would allow participants to have anonymity which may allow the participants to feel comfortable to share and able to behave naturally.
- A semi-structured interview enables the researchers to collect rich, qualitative data. It may include data on things they had not previously considered.

**Surveys:**

- A survey with questionnaires using closed and some open-ended questions is less time consuming as it is easy to collect and analyse large amounts of quantitative data.
- A survey can collect data from people that are in different years, colleges or countries. This would result in a larger group of participants, which is more representative of the entire population and it would be easier to generalize findings.
- Surveys generally allow researchers to collect a large amount of data in a relatively short period and they are less expensive than qualitative methods.
- With a survey it is easy to analyse the data statistically. If the sample is randomized then the findings can be generalized to a target population.

2. Describe the ethical considerations that were applied in the study and explain if further ethical considerations could be applied. [6]

**Describe** the ethical considerations that were already applied. Award [1] per relevant point made, up to a maximum of [3].

The command term “describe” requires candidates to give a detailed account.

If a candidate names relevant ethical considerations without also accurately describing them, a maximum of [1] should be awarded.

- **Informed consent:** The participants were fully informed about the nature of the study and what they would be asked to do. This means that they were aware of the aims of the study. They also signed forms to say that they understood and agreed to take part.
- **No deception:** The participants were not deceived because they were fully informed about the nature and aims of the study. The researchers had no reasons to use deception.
- **Right to withdraw:** The participants were informed that they could stop participating and leave the study whenever they wanted. This would also mean that they could withdraw their results.
- **Lack of coercion:** The participants joined the study voluntarily and were not forced/coerced to participate.
- Any other relevant points.

**Explain** if further ethical considerations could be applied. Award [1] per relevant point made, up to a maximum of [3].

The command term “explain” requires candidates to give a detailed account including reasons or causes.

If a candidate names relevant ethical considerations without also accurately explaining them, a maximum of [1] should be awarded.

- **Debriefing:** The researchers should make sure that all participants are debriefed after the study is over, and that they have the opportunity to ask questions. The researchers should aim for the participants to leave in the same psychological state as they were in before the study. The researchers must explain what the study was about and what results they expected to find. They could also inform them how the data of this study is going to be used and provide information so that they can contact the research team with questions once the research is over.
- **Confidentiality:** The participants should be assured that their data will be kept confidential. The researchers have a responsibility to handle data carefully and to store it safely in order to make sure that participants’ identities are not disclosed to anyone who is not in the research team. When the findings are published, the participants should not be identifiable, or able to be linked to a specific set of results. This may be achieved by making sure data is anonymized. Researchers should also provide clarity for participants regarding how and when their data will be destroyed.
- **Protection from harm:** The researchers should make sure that participants are not subjected to any harm (physical and psychological) or discomfort during the experiment, for example, pressuring them to perform faster, openly comparing their results or not accepting a participant’s decision to leave in the middle of the experiment. There is unlikely to be a need to offer any follow up support given the nature of this study.
- Any other relevant point.

Anonymity cannot be applied in this study as participants were tested in groups together and probably also knew/recognized each other from the university.

3. Discuss how the researchers in the study could avoid bias. [9]

*Refer to the paper 3 markbands when awarding marks.*

*Marks should be awarded according to the descriptors in the markbands. A best-fit approach is used to ascertain which particular mark to use from the possible range for each level descriptor.*

*The command term “discuss” requires candidates to offer a considered and balanced review of how a researcher in this study could avoid bias.*

Candidates may refer to measures that were taken in the study or suggest measures that could have been taken, or a combination of the two. Each of these approaches are equally acceptable.

Minimising bias is a key consideration when designing and undertaking research. Candidates may argue that experimental research is prone to errors and that experimenters can make mistakes that will lead to bias but also point to potential sources of bias related to this study.

Discussions related to how a researcher could avoid bias in this study could be but are not limited to:

- The researchers could make sure that they have a well-designed research protocol where data collection and analysis is well described, and they could run a pilot study in order to test the overall design and measures used in the experiment. This would also help to see if all possible confounding variables have been controlled for.
  - Sampling bias is a danger in the case of a non-probability sample, as in this study. Sampling bias occurs when participants in a sample are not selected randomly. However, if participants are randomly allocated to the experimental conditions it is possible to control for participant bias. This was also done in this study.
  - To prevent procedural bias the researchers should make sure that participants have the same amount of time to read the materials and take the tests. This was also done in this study. Procedural bias may also happen when participants are forced to participate, for example, for course credits. This was avoided in this study as nobody was forced to join the study.
  - The researchers avoided reporting bias in this study. They published the results even though they had to accept the null hypothesis. They could have decided to not publish it (the drawer effect) or even to manipulate the results to fit the research hypothesis. This is sometimes done (publication bias) and sometimes – but not always- it is discovered during the review before publication.
  - The researcher can avoid confirmation bias during analysis of data by having more researchers participate in the collection and analysis of data (researcher triangulation.) In this study, there was more than one researcher so they probably all took part in running the experiments as well as analysis of the data.
  - To prevent experimenter bias (the Rosenthal effect) the researcher could make sure that the experimenter is blind to the hypothesis of the study. This would help prevent threats to internal and external validity. However, neither the experimenter nor the participants were blind to the hypothesis, and the researchers should take this into account when analysing and discussing the data.
  - Although researchers carrying out quantitative research try to be as objective as possible, no research is completely without some subjectivity. The researcher should use reflexivity / critical self-awareness with regard to areas such as personal interests and methodological choices.
  - The researcher could control demand characteristics (i.e. participants may respond to cues from the experimenter, which could somehow tell them what is expected of them) or the Hawthorne effect (i.e. the mere fact of being in a study makes participants perform better.) This could affect their behaviour in the experiment and thus affect the validity of the study.
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