7.4 Features of Science: Objectivity, Falsifiability, Replication and Paradigms: Test Pack

AQA 7182 · about 15 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer in full sentences for questions worth 4 marks or more.

1 Define 'objectivity' as it is used in the scientific study of psychological phenomena, naming the context of measurement and interpretation.

(Total for Question 1 is 2 marks)

2 Define 'replicability' in psychological research and explain briefly why it is important for building scientific knowledge in psychology.

(Total for Question 2 is 2 marks)

3 Define briefly what is meant by 'theory construction' in psychology and give one way researchers move from observations to a formal theory in this field.

(Total for Question 3 is 2 marks)

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4 A researcher proposes a broad claim that 'all dreams are expressions of unconscious wish fulfilment' without suggesting any way the claim could be tested or disproved. Using Popper's criterion of falsifiability, explain why this claim would be criticised as unscientific, and suggest one way the researcher could reformulate the claim to make it falsifiable in a research study.

(Total for Question 4 is 3 marks)

5 Explain two reasons why strict objectivity may be difficult to achieve in psychological research, giving an example for each reason.

(Total for Question 5 is 4 marks)

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Mark scheme · 7.4 Features of Science: Objectivity, Falsifiability, Replication and Paradigms: Test Pack

Question 1

states that objectivity means observations and measurements are independent of the observer's biases or opinions oe	**B1**
states that objectivity aims for standardised, replicable procedures and clear operational definitions oe	**B1**

Answer: Objectivity means making observations and measurements that are not influenced by the researcher's personal beliefs or biases, achieved by using standardised, replicable procedures and clear operational definitions.

Question 2

defines replicability as the ability for a study or finding to be repeated using the same or similar methods and produce similar results oe	**B1**
states briefly that replicability increases confidence in findings and helps detect false positives or unreliable results oe	**B1**

Answer: Replicability is the ability for a study to be repeated using the same or similar methods and to obtain similar results; it is important because repeated success increases confidence in findings and helps identify unreliable or false positive results.

Question 3

defines theory construction as developing a coherent model or set of principles that explain observed phenomena and predict new findings oe	**B1**
gives one way: e.g. collecting empirical data, identifying patterns, and formulating hypotheses which are then tested and refined into a theory oe	**B1**

Answer: Theory construction is developing a coherent model of principles that explain observed phenomena and predict new findings. Researchers move from observations to theory by collecting empirical data, spotting patterns, forming hypotheses and then testing and refining those hypotheses into a formal theory.

Question 4

explains that as stated the claim is unfalsifiable because it is so broad and interpretable that no possible observation could count as disconfirming evidence oe	**M1**
applies Popper: unfalsifiable claims are not scientific because they cannot be tested and risk being immunised against refutation oe	**A1**
suggests a reformulation that is testable, e.g. specify measurable indicators of wish fulfilment and predict a directional relationship between those indicators and dream content in an operationalised study oe	**B1**

Answer: The claim is unfalsifiable because its broad, interpretive wording allows any dream to be reinterpreted as wish fulfilment, so no observation could decisively disprove it. Popper would say such claims are unscientific because they cannot be tested. To make it falsifiable the researcher could operationalise 'wish fulfilment', for example by predicting that dreams scored for specific wish-related themes using a validated coding scheme will occur more often among people who report strong conscious desires on a standardised questionnaire; finding no association would then falsify the specific hypothesis.

Question 5

identifies reason 1: researcher bias or theoretical perspective can shape what is studied and how data are interpreted oe	**M1**
gives an example and explains consequence, e.g. a researcher committed to a cognitive explanation may design measures that favour cognitive interpretations, reducing neutrality of interpretation oe	**A1**
identifies reason 2: some psychological phenomena are subjective or internal and require interpretation, making purely objective measurement difficult oe	**M1**
gives an example and explains consequence, e.g. measuring unconscious motives or dreams often relies on interpretive methods like thematic coding which involve subjective judgement and limit replicability oe	**A1**

Answer: Strict objectivity is hard because researchers' theoretical commitments can influence which questions are asked and how results are interpreted, for example a cognitive researcher may favour information-processing measures that bias interpretation. Also, many psychological phenomena are internal and subjective, such as unconscious motives or dream content, requiring interpretive coding that introduces researcher judgement and reduces purely objective measurement.

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