

PRACTICE WORKSHEET + FULL ANSWER KEY

Research methods and evaluating evidence

Senior school psychology. Work through the sections in order, or choose the one that matches this week's topic.

QUESTIONS	SECTIONS	ANSWER KEY	WORKING SPACE
52	5	At the back	Ruled

Name _____ Class _____ Date _____

Before you start

Identify what a study measures before evaluating what it shows. An operational definition makes a variable measurable, while the design determines which conclusions the evidence can support.

WORKED EXAMPLE

A study compares word recall after 5 or 8 hours of sleep. Identify the variables.

- 1 The independent variable is the sleep-duration condition.
- 2 The dependent variable could be the number of words correctly recalled from the same list.
- 3 Other conditions, such as testing time and list difficulty, need consideration.

Use this method as your model. Set out your own working the same way.

Common mistakes to avoid

- Assuming a correlation establishes causation
- Using an evaluation point without explaining its consequence

There are 52 questions across 5 sections. Write in the ruled space, then mark your work against the answer key at the back. Topics covered: Variables and hypotheses, Research design, Evaluation.

SECTION A Variables and hypotheses

Identify what a study measures before evaluating what it shows.

1

Write an operational definition for word recall.

2

A study compares recall after 5 or 8 hours of sleep. Name the independent variable.

3

For that study, name the dependent variable.

4

State one variable to control in that study.

5

Write a directional hypothesis for that study.

6

Write the null hypothesis for that study.

7

Explain the difference between a directional and a non-directional hypothesis.

8

Define an extraneous variable.

9

Define a confounding variable.

10

Explain why an operational definition matters.

11

Name one way to standardise procedure across participants.

SECTION B Research design

Name the design, then the effect it controls and the one it introduces.

12

Explain a possible order effect in a repeated-measures study.

13

How could counterbalancing help?

14

State one advantage of a repeated-measures design.

15

State one advantage of an independent-groups design.

16

Describe a matched-pairs design.

17

Define random allocation and state its purpose.

18 State one limitation of a laboratory experiment.

19 State one advantage of a field experiment.

20 Explain what a pilot study is for.

21 Explain the difference between a structured and an unstructured interview.

22 Name one strength and one weakness of a questionnaire.

SECTION C Sampling and participants

Ask who could have been left out, and what that would do to the conclusion.

23 What is one limitation of a volunteer sample?

24 Describe an opportunity sample and one drawback.

25 Describe a random sample.

26 Describe a stratified sample.

27 Explain why sample size affects confidence in a finding.

28 Explain what is meant by generalisability.

29 A study uses only university students. State one limitation.

30 Define demand characteristics.

31 Name one way to reduce demand characteristics.

32 Define investigator effects.

SECTION D Ethics

An ethical problem is usually a methodological one as well.

- 33** Explain why consent and the right to withdraw matter.

- 34** Define informed consent.

- 35** Define deception and state when it may be considered.

- 36** Explain the purpose of a debrief.

- 37** Define confidentiality in a study.

- 38** Explain protection from harm.

- 39** Explain why studies with children need extra safeguards.

- 40** Name the body that normally approves research in an institution.

- 41** Explain why an ethical issue can also be a methodological one.

- 42** State one reason to store raw data securely.

SECTION E Analysing and evaluating evidence

State what the evidence supports, and what it does not.

- 43** Explain why a correlation does not establish causation.

- 44** A correlation coefficient is -0.8. Describe the relationship.

- 45** State when the median is a better summary than the mean.

- 46** Explain what a bar chart shows in psychological data.

47

Explain the difference between quantitative and qualitative data.

48

State one strength of qualitative data.

49

Explain what replication contributes to psychology.

50

Explain publication bias in one sentence.

51

A newspaper reports a study of 12 people as proof. Give one criticism.

52

Write two sentences evaluating a study, naming one strength and one limitation with its consequence.

Answer key

Work each section before you check it. These are model answers: an equivalent method, or a different well-supported interpretation, can be just as correct.

SECTION A - VARIABLES AND HYPOTHESES

1. For example, the number of words correctly written from a 20-word list within two minutes.
2. The sleep-duration condition.
3. The number of words correctly recalled from the list.
4. Examples: word-list difficulty, time of testing or study time.
5. Participants who sleep 8 hours will recall more words than those who sleep 5 hours.
6. There will be no difference in recall between the two sleep conditions.
7. A directional hypothesis predicts which way the difference will go; a non-directional one predicts only that a difference exists.
8. A variable other than the independent variable that could affect the dependent variable if it is not controlled.
9. An uncontrolled variable that varies systematically with the independent variable, so its effect cannot be separated.
10. It states exactly how a variable is measured, so the study can be replicated and results compared.
11. Use the same instructions, timing and materials for everyone.

SECTION B - RESEARCH DESIGN

12. Practice may improve performance in a later condition, or fatigue may reduce it.
13. Participants experience the conditions in different orders, which distributes order effects across the sample.
14. Participant variables are controlled, because the same people take part in every condition.
15. There are no order effects, because each participant takes part in only one condition.
16. Participants are paired on relevant characteristics, then one of each pair is assigned to each condition.
17. Assigning participants to conditions by chance, so participant differences are spread evenly.
18. The controlled setting may not reflect everyday behaviour, which lowers ecological validity.
19. Behaviour is observed in a natural setting, which can raise ecological validity.
20. It tests the procedure on a small scale so problems with materials, timing or instructions can be fixed first.
21. A structured interview uses fixed questions in a fixed order; an unstructured interview follows the participant's answers.
22. It gathers data from many people quickly, but answers may be affected by social desirability.

SECTION C - SAMPLING AND PARTICIPANTS

23. Volunteers may differ systematically from the population, which limits generalisation.
24. Using whoever is available; it is convenient but unlikely to represent the population.
25. Every member of the population has an equal chance of being selected.
26. The population is divided into subgroups and sampled in proportion to their size.
27. A larger sample reduces the influence of unusual individuals, so the estimate is more stable.
28. How far the findings can be applied beyond the sample studied.
29. The sample is narrow in age and education, so the findings may not apply to other groups.
30. Cues that lead participants to guess the aim and change their behaviour.
31. Use a single-blind procedure, or a distractor task, so the aim is less obvious.
32. Ways the researcher unintentionally influences the results, for example through tone or expectation.

SECTION D - ETHICS

33. Participants should understand participation sufficiently to make a voluntary choice and be able to stop without inappropriate pressure.
34. Agreeing to take part after being told what the study involves and any risks.
35. Withholding or misstating the aim; it may be considered only when necessary and minimal, and followed by full debriefing.
36. It tells participants the true aim, answers questions and restores them to their prior state.
37. Data are stored and reported so individual participants cannot be identified.
38. Participants should be at no greater risk of physical or psychological harm than in everyday life.
39. They cannot give full informed consent, so a parent or guardian must consent and the child's assent should be sought.
40. An ethics committee, or an institutional review board.
41. A participant who feels uncomfortable may not behave naturally, which weakens the data.
42. It protects participants' privacy and allows the analysis to be checked.

SECTION E - ANALYSING AND EVALUATING EVIDENCE

- 43. Two variables can change together because of a third factor or by chance; only a controlled experiment can support a causal claim.
- 44. A strong negative relationship: as one variable rises, the other tends to fall.
- 45. When the data contain extreme values that would pull the mean away from the typical value.
- 46. The value of a summary statistic, such as a mean, for separate categories or conditions.
- 47. Quantitative data are numerical; qualitative data are descriptive, such as interview transcripts.
- 48. It gives depth and context that a number alone cannot capture.
- 49. Repeating a study checks whether the finding is reliable rather than a one-off result.
- 50. Studies with significant results are more likely to be published, so the literature can overstate an effect.
- 51. The sample is very small, so the finding may be neither reliable nor generalisable.
- 52. A paragraph naming a specific strength and a specific limitation, each with its effect on the conclusion.

Review and next steps

Mark your work against the answer key, record your score for each section, then answer the three questions below. Bring this page to your next lesson so your tutor can start from what actually blocked you.

Which question did you find hardest, and what exactly stopped you?

Rewrite the corrected working for that question here.

Which section do you want to practise again before your next lesson?

Score record

SECTION	QUESTIONS	NUMBER CORRECT	PRACTISE AGAIN?
A. Variables and hypotheses	11		
B. Research design	11		
C. Sampling and participants	10		
D. Ethics	10		
E. Analysing and evaluating evidence	10		
Total	52		

Keep going with one-to-one support.

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