

PSYB1 & 2 - Research methods

Topic 1: Designing studies: research questions, aims, populations and samples.

Specification ref:	3.1.4 Methods of research	Time allocation	2 hours	
Specification content:	PSYB1: formulating research questions. Stating aims. Populations and sampling. Sampling techniques, including opportunity, random, stratified and systematic.			
Assessment objectives Learning outcomes	A01 – knowledge & understanding	A02 – application, analysis & evaluation	A03 – methods, statistics & ethics (how science works)	Links with other topics
All students will be able to:	Explain what a research question and an aim are. Define general population, target population, sample. Outline sampling methods: opportunity, random, stratified and systematic.	Distinguish between research questions and aims. Analyse research examples to identify target populations and samples. State whether different samples are likely to produce representative samples.	Demonstrate these knowledge, understanding and skills in the context of material drawn from the PSYB2 topics (social, cognitive, individual differences).	All material covered here relates to other specification areas, where it is usually assessed under A03.
Most students will be able to:	Outline the concept of representativeness. Explain how to obtain opportunity, random, stratified and systematic samples.	Suggest research questions and aims for given situations. Distinguish between general population, target population and sample. Assess the strengths and weaknesses of different sampling methods.	As above.	
Some students will be able to (G&T):	Explain the relationship between the sampling method used and the representativeness of the resulting sample.	Suggest research questions and aims of own devising. Evaluate studies using knowledge and understanding of sampling methods.	As above.	
Resources/activities				

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Topic 2: Doing experiments - IV, DV and hypotheses

Specification ref:	3.1.4 Methods of research	Time allocation	2 hours	
Specification content:	PSYB1: Independent and dependent variables. Manipulation and control of variables in experiments. Formulating hypotheses (null and experimental/alternative/research). PSYB2: In order to answer questions in this unit, candidates must have studied Experimental Methods in PSYB1.			
Assessment objectives Learning outcomes	A01 – knowledge & understanding	AO2 – application, analysis & evaluation	AO3 – methods, statistics & ethics (how science works)	Links with other topics
All students will be able to:	Outline the nature and purpose of the experimental method. Define IV and DV. Explain what a hypothesis is.	Analyse examples to identify IV and DV. Formulate basic alternative hypotheses.	Demonstrate these knowledge, understanding and skills in the context of material drawn from the PSYB2 topics (social, cognitive, individual differences).	All material covered here relates to other specification areas, where it is usually assessed under AO3.
Most students will be able to:	Explain the concept of operationalisation. Outline the relationship between levels of IV and conditions in an experiment. Explain what a null hypothesis is.	Analyse examples in terms of how variables were operationalised. Formulate operationalised alternative and null hypotheses.	As above.	
Some students will be able to (G&T):	Explain the purpose of the null hypothesis.	Critically consider how different psychological variables might be operationalised.	As above.	Learning skills
Resources/activities				

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Topic 3: Doing experiments - controls, extraneous and confounding variables

Specification ref:	3.1.4 Methods of research	Time allocation	2 hours	
Specification content:	PSYB1: Manipulation and control of variables in experiments. Extraneous and confounding variables. PSYB2: In order to answer questions in this unit, candidates must have studied Experimental Methods in PSYB1.			
Assessment objectives Learning outcomes	A01 – knowledge & understanding	A02 – application, analysis & evaluation	A03 – methods, statistics & ethics (how science works)	Links with other topics
All students will be able to:	Define control, extraneous and confounding variables.	Analyse examples to identify variables that have been controlled.	Demonstrate these knowledge, understanding and skills in the context of material drawn from the PSYB2 topics (social, cognitive, individual differences).	All material covered here relates to other specification areas, where it is usually assessed under A03.
Most students will be able to:	Explain the need for controls in experiments.	Distinguish between extraneous and confounding variables. Analyse examples to identify extraneous or confounding variables. Explain the requirement to control particular variables in given contexts. Suggest ways of controlling extraneous variables.	As above.	
Some students will be able to (G&T):	Outline the types of variable most likely to affect/confound investigations in different areas of psychology.	Analyse examples to identify confounding variables (distinct from extraneous). Explain the probable effect of given confounding variables. Consider, for given examples, which variables it is necessary to control and which can be ignored.	As above.	
Resources/activities				

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Topic 4: Doing experiments - settings and designs

Specification ref:	3.1.4 Methods of research	Time allocation	3 hours	
Specification content:	PSYB1: Experiments: field, laboratory and quasi experiments. Issue of ecological validity. Experimental designs: repeated or related measures, matched pairs, independent groups and appropriate use of each. Controls associated with different designs, including counterbalancing. Strengths and limitations of different experimental designs. PSYB2: In order to answer questions in this unit, candidates must have studied Experimental Methods in PSYB1.			
Assessment objectives Learning outcomes	A01 – knowledge & understanding	A02 – application, analysis & evaluation	A03 – methods, statistics & ethics (how science works)	Links with other topics
All students will be able to:	Define laboratory, field and quasi experiment, ecological validity. Outline experimental designs: independent groups, repeated measures, matched pairs.	State the relationship between setting and ecological validity. Outline the controls associated with independent and related designs. Analyse examples to identify setting and experimental design used.	Demonstrate these knowledge, understanding and skills in the context of material drawn from the PSYB2 topics (social, cognitive, individual differences).	All material covered here relates to other specification areas, where it is usually assessed under A03.
Most students will be able to:	Describe the relationship between setting, control and ecological validity. Define participant variables, practice & order effects. Explain the controls associated with different experimental designs (counterbalancing, random assignment to conditions).	Assess the strengths and weaknesses of different settings and designs generically and with reference to examples. Analyse examples to identify poor design. Suggest improvements to poor experimental design.	As above.	
Some students will be able to (G&T):	Explain why quasi experiments are more prone to confounding variables than true experiments. Describe circumstances under which different experimental settings/designs would be preferred.	Justify choice of setting and experimental design in terms of what was being investigated.	As above.	Learning skills
Resources/activities				

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Topic 5: Analysing data from experiments

Specification ref:	3.1.4 Methods of research	Time allocation	2 hours	
Specification content:	PSYB1: calculation and use of measures of central tendency (mean, median, mode) and measures of dispersion (range and standard deviation).			
Assessment objectives Learning outcomes	A01 – knowledge & understanding	A02 – application, analysis & evaluation	A03 – methods, statistics & ethics (how science works)	Links with other topics
All students will be able to:	Define central tendency and dispersion. Explain the procedure for calculating mean, median and mode. Explain the procedure for obtaining the range.	Calculate mean, median and mode and range for small data sets. Calculate standard deviation with instructions. Interpret experimental data in terms of central tendencies. State advantages and disadvantages of each statistic.	Demonstrate these knowledge, understanding and skills in the context of material drawn from the PSYB2 topics (social, cognitive, individual differences).	All material covered here relates to other specification areas, where it is usually assessed under A03.
Most students will be able to:	Describe situations where it is inappropriate to use each statistic. Explain what dispersion measures indicate about data sets.	Distinguish between measures of central tendency and dispersion. Interpret experimental data in terms of central tendency and dispersion. Analyse examples to identify whether appropriate statistics have been used. Justify choices of statistics in given examples.	As above.	
Some students will be able to (G&T):	Explain what the standard deviation indicates about a sample/population.	Select and justify appropriate statistics for unfamiliar examples.	As above.	
Resources/activities				

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Topic 6: Strengths and limitations of the experimental method

Specification ref:	3.1.4 Methods of research	Time allocation	1 hour	
Specification content:	PSYB1: strengths and limitations of experimental methods. PSYB2: In order to answer questions in this unit, candidates must have studied Experimental Methods in PSYB1.			
Assessment objectives Learning outcomes	A01 – knowledge & understanding	A02 – application, analysis & evaluation	A03 – methods, statistics & ethics (how science works)	Links with other topics
All students will be able to:	Define reliability and validity. Outline the generic advantages and disadvantages of the experimental method.	Distinguish between reliability and validity. State the likely strengths and weaknesses of a given experimental study.	Demonstrate these knowledge, understanding and skills in the context of material drawn from the PSYB2 topics (social, cognitive, individual differences).	All material covered here relates to other specification areas, where it is usually assessed under A03.
Most students will be able to:	Outline the design factors likely to affect the reliability/validity of an experiment. Describe the relative/conditional advantages and disadvantages of different ways of conducting experiments.	Assess the strengths and weaknesses of a given study in terms of an analysis of the experimental methods/design used. Evaluate studies in terms of their reliability/validity.	As above.	
Some students will be able to (G&T):	Explain conditions under which experimentation is possible, desirable and necessary.	Suggest improvements that would maximize the reliability/validity of a given experimental study.	As above.	Learning skills
Resources/activities				