EXPERIMENTAL METHOD 1

AIMS
The purpose of the investigation
HYPOTHESES
The formulation of a testable statement
DIRECTIONAL OR NON DIRECTIONAL
Identifying a difference/correction or not
One-tailed and two-tailed predictions

VARIABLES
IV's and DV's
IV is manipulated, DV is measured
LEVELS OF THE IV
Experimental and control conditions
OPERATIONALISATION
'De-Fuzzying' variables

CONTROL OF VARIABLES 2
Factors that affect the relationship between the IV and DV

EXTRANEOUS VARIABLES
Nuisance variables but randomly distributed
CONFOUNDING VARIABLES
Vary systematically with the IV
DEMAND CHARACTERISTICS
Participants second guess the aims and alter their behaviour
INVESTIGATOR EFFECTS
The unconscious influence of the researcher on the research situation
RANDOMISATION
The use od chance to reduce the researcher's influence
STANDARDISATION
Ensuring all participants are subject to the same experience

EXPERIMENTAL DESIGN 3
Ways of using participants in experimental research

TYPES OF DESIGN
INDEPENDENT GROUPS DESIGN
Participants in each condition of an experimental are different
REPEATED MEASURES DESIGN
All participants take part in all conditions
MATCHED PAIRS DESIGN
Similar participants put in pairs and allocated to different experimental conditions

EVALUATION
INDEPENDENT GROUPS DESIGN
Less economical, no order effects and participants variables not controlled
REPEATED MEASURES DESIGN
Order effects, demand characteristics, no participants variables problem, more economical
MATCHED PAIRS DESIGN
No order effects , cannot match participants exactly. Time-consuming

TYPES OF EXPERIMENT 4
LAB EXPERIMENTS
IV is manipulated in controlled setting
FIELD EXPERIMENTS
IV is manipulated in a natural setting
NATURAL EXPERIMENTS
IV has been manipulated naturally, effect on DV is recorded
QUASI-EXPERIMENTS
IV based on an existing difference between people, effect on DV is recorded

EVALUTION
LAB EXPERIMENTS
Highly internal validity (control). Low external validity (low realism). Cause and effect. Replication. Demand characteristics
FIELD EXPERIMENTS
Lower internal validity. Higher external validity (realism). Ethical issues
NATURAL EXPERIMENTS
Low internal validity (no random allocation). High external validity. Opportunities may be rate.
QUASI-EXPERIMENTS
Low internal validity (no random allocation). High external validity

ETHICAL ISSUES AND WAYS OF DEALING WITH THEM 5a

INFORMED CONSENT
Advising pp's of what is involved. May reveal research aims
DECEPTION
Telling the truth
PROTECTION FROM HARM
Minimising psychological and physical risk
PRIVACY AND CONFIDENTIALLY
Protecting personal data

ETHICAL ISSUES- EVALUATION 5b
INFORMED CONSENT
Get permission. Presumptive, prior general, retrospective
DECEPTION / PROTECTION FROM HARM
Debriefing
PRIVACY AND CONFIDENTIALLY
Maintaining anonymity. Use numbers not names

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SAMPLING 6
Selecting participants for an investigation

RANDOM SAMPLING
All members of the population have an equal chance of selection
SYSTEMATIC SAMPLING
Selecting every nth person from a list
STRATIFIED SAMPLING
Sample reflects the proportion of people within different population strata
OPPORTUNITY SAMPLING
Choosing whoever is available
VOLUNTEER SAMPLING
Participants 'self-select'

EVALUATION
RANDOM SAMPLING
No researcher bias. Time consuming. May end up with biased sample.
SYSTEMATIC SAMPLING
No researcher bias. Usually fairly representative. May end up with biased sample.
STRATIFIED SAMPLING
No researcher bias. Representative. Cannot account for all biased sample
OPPORTUNITY SAMPLING
Convenient. Researcher bias. Unrepresentative.
VOLUNTEER SAMPLING
Less time consuming.
Attracts a certain profile of person

OBSERVATION TECHNIQUES 7
Watching or listening

NATURALISTIC OBSERVATION
Behaviour observed where it would normally occur. No control over variables
CONTROLLED OBSERVATION
Some control environment, including manipulation of variables to observe effects
CONVERT AND OVERT OBSERVATION
Observations without or with their knowledge
PARTICIPANT AND NON-PARTICIPANT
To join the group or remain an outsider

EVALUATION
NATURALISTIC OBSERVATION
Low internal validity (control is difficult). High external validity (especially when covert)
CONTROLLED OBSERVATION
Low internal validity- though some extraneous variables may be controlled
High external validity –especially when covert
COVERT AND OVERT OBSERVATION
Covert: low participant reactivity but ethically questionable
Overt: behaviour may be affected
PARTICIPANT AND NON-PARTICIPANT
Participant: Increased external validity but may 'go native'
Non-participant: more objectivity but less insight

OBSERVATIONAL DESIGN 8
Planning an observation

UNSTRUCTURED AND STRUCTURE
Researcher records everything (unstructured) or controls what is recorded (structure)
BEHAVIOURAL CATEGORIES
Target behaviours broken down into observable components
SAMPLING METHODS
Continuous.
Event sampling: counts events
Time sampling: count at timed intervals

EVALUATION
UNSTRUCTURED AND STRUCTURE
Unstructured: More information but may be too much, qualitative data harder to analyse
Structured: may miss behaviours
BEHAVIOURAL CATEGORIES
Must be observable. Avoid dustbin category. No overlap
SAMPLING METHODS
Event sampling: useful for infrequent behaviour, may miss complexity.
Time sampling: Less effort may not represent whole behaviours

CORRELATIONS 9
Analysing the relationship between co-variables

TYPES OF CORRELATION
Positive, negative and zero
DIFFERENCE BETWEEN CORRELATIONS AND EXPERIMENTS
No IV or DV
No manipulation of variables

EVALUATION
STRENGTHS
Useful preliminary tool
Quick and economical to carry out, using secondary data
LIMITATIONS
Cannot demonstrate cause and effect
The third variable problem (intervening variable)
Misuse and misinterpretation

PILOT STUDIES | 10

PILOT STUDIES
Checking procedures and materials. Making modifications.
SINGLE BLIND
Participants aren't made aware of research aims until the end
DOUBLE BLIND
Neither participants nor the individual conducting the research know the aim beforehand
CONTROL GROUP/CONDITION
Used as a comparison

DATA ANALYSIS: GRAPHS | 12
Eyeball the data

PRESENTATION AND DISPLAYS OF QUANTITATIVE DATA
TABLES
Raw scores are converted to descriptive statistics and summarised in a table
BAR CHARTS
Discrete categorical data represented for clear comparison
The frequency of each category is the height of the bar
SCATTERGRAMS
Shows the strength and direction of a relationship between co- variable

DISTRIBUTIONS
NORMAL DISTRIBUTION
Bell curve. Mean, median and mode at same point. Trials never touch zero.
SKEWED DISTRIBUTIONS
Negative skew leans right
Positive skew leans left

DATA ANALYSIS: DESCRIPTIVE STATISTICS
Summarising quantitative data

MEASURES OF CENTRAL TENDENCY
MEAN
Add them all up and divide number
MEDIAN
The middle value
MODE
Most frequently occurring | 14a
EVALUATION
MEAN
Most sensitive and representative. Easily distorted.
MEDIAN
Not affected by extreme values.
Less sensitive than the mean
MODE
Easy to calculate
Crude, unrepresentative

SELF-REPORT TECHNIQUES
Participants report their thoughts and feelings
QUESTIONNAIRES
QUESTIONNAIRES
Pre-set list of written questions
CLOSED AND OPEN QUESTIONS
Fixed number of answers or not | 11
EVALUATION
QUESTIONNAIRES
Can distribute to many people. Easy to analyse. Social desirability bias. Acquiesce bias.
CLOSED AND OPEN QUESTIONS
Produces quantitative or qualitative data, affected ease of analysis

INTERVIEWS
STRUCTURED INTERVIEWS
Pre-set questions in a fixed order
UNSTRUCTURED INTERVIEWS
No set formula, just a general topic. Questions developed based on responses
SEMI-STRUCTURED INTERVIEWS
Pre-set questions within flexibility to ask follow-ups
EVALUATION
STRUCTURED INTERVIEWS
Similar to questionnaire but fewer respondents
UNSTRUCTURED INTERVIEWS
More flexibility. Analysis is more difficult. Social desirability bias may be reduced by rapport.
SEMI-STRUCTURED INTERVIEWS
Advantages of both structured and unstructured

DATA ANALYSIS: KINDS OF DATA

QUALITATIVE AND QUANTITATIVE DATA
QUALITATIVE DATA: Written, non numerical description of the participants thought, feeling or opinions
QUANTITATIVE DATA: Expressed numerically rather than in words
EVALUATION
QUALITATIVE DATA: Rich in detail.
Greater external validity.
Difficult to analyse | 13
QUANTITATIVE DATA: Easy to analyse,
less biased and narrow in scope

PRIMARY AND SECONDARY DATA
PRIMARY DATA: Collected first hand from participants for the purpose of the investigation
SECONDARY DATA: collected and analysed by someone other than the researcher
EVALUATION
PRIMARY DATA:
High validity
targets relevant information
time and effort
SECONDARY DATA:
Inexpensive and easy to access
Variation in the quality
Outdated and incomplete

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DATA ANALYSIS: DESCRIPTIVE STATISTICS

Summarising quantitative data

RANGE
Subtract the lowest from the highest and add 1

STANDARD DEVIATION
Measures how much scores deviate from the mean

EVALUATION
14b

RANGE
Easy to calculate
May be unrepresentative of the data set.

STANDARD DEVIATION
Much more precise than the range
Can be distorted by extreme values

INTRODUCTION TO STATISTICAL TESTING

Finding out if your result is meaningful

STATISTICAL TESTING
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SIGNIFICANCE
Results have not occurred by chance

PROBABILITY
The 5% significance level
The more stringent 1% level

CRITICAL VALUE
Comparison with calculated value to determine significance

THE SIGN TEST

CRITERIA
Testing for difference

STEPS
1. Convert to nominal data
2. Add up pluses and minuses
3. S= Less frequent sign
4. Compare calculated value of the S with critical value

Mathematical content

At least 10% of the assessment marks in psychology will be based on mathematical content.

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PERCENTAGE AND FRACTIONS
Covert one to other and to decimals

DECIMALS
Appropriate number of significant figures

RATIOS
Part to whole
Part to part

MATHEMATICAL SYMBOLS
$=, >, <, >>, <<$

PEER REVIEW

Scrutiny of research by peers

FUNDING
Approval of project proposals

VALIDATION
Quality checks

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IMPROVEMENTS
Minor revisions or rejection of report

EVALUATION

ANONYMITY
May permit unjustified criticisms by rivals

PUBLICATION BIAS
File drawer problem, create false impression of current knowledge

BURYING GROUND-BREAKING RESEARCH
Maintains status quo

PSYCHOLOGY AND THE ECONOMY

ATTACHMENT RESEARCH
Equal care from mother and father, means more effective contribution to economy

MENTAL HEALTH
Absenteeism due to moderate mental health (e.g. depression) issues costs the economy

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How do we use Knowledge Organisers in Psychology

How can you use knowledge organisers at home to help us?

- **Retrieval Practice**: Read over a section of the knowledge organiser, cover it up and then write down everything you can remember. Repeat until you remember everything.
- **Flash Cards**: Using the Knowledge Organisers to help on one side of a piece of paper write a question, on the other side write an answer. Ask someone to test you by asking a question and seeing if you know the answer.
- **Mind Maps**: Turn the information from the knowledge organiser into a mind map. Then reread the mind map and on a piece of paper half the size try and recreate the key phrases of the mind map from memory.
- **Sketch it**: Draw an image to represent each fact; this can be done in isolation or as part of the mind map/flash card.
- **Teach it**: Teach someone the information on your knowledge organiser, let them ask you questions and see if you know the answers.

How will we use knowledge organisers in Psychology?

- **Test:** We will do regular low stakes tests to check your ability to retrieve information from memory.
- **Mark our answers**: Once you have done a low stake test you can mark your work using the knowledge organiser.
- **Improve our work:** Once you have finished a piece of work you may be asked to check your knowledge organiser to see if there is any information on it that you could add into an answer.

ASSESSMENT TYPE	SECTION ON KNOWLEDGE ORGANISER	DATE COMPLETED	SCORE/TOTAL SCORE