



Knowledge Organiser: Yr 12

Psychology; RESEARCH METHODS AS

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-Fuzzifying' variables

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

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 CONFIDENTIALITY

Protecting personal data

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 of chance to reduce the researcher's influence

STANDARDISATION

Ensuring all participants are subject to the same experience

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

EVALUATION

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 rare.

QUASI-EXPERIMENTS

Low internal validity (no random allocation). High external validity

ETHICAL ISSUES- EVALUATION

INFORMED CONSENT

Get permission. Presumptive, prior general, retrospective

DECEPTION / PROTECTION FROM HARM

Debriefing

PRIVACY AND CONFIDENTIALITY

Maintaining anonymity. Use numbers not names

5b

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<u>SAMPLING</u> Selecting participants for an investigation 6 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' <u>EVALUATION</u> 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	<u>OBSERVATION TECHNIQUES</u> Watching or listening 7 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 <u>EVALUATION</u> 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 CONVERT 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
<u>OBSERVATIONAL DESIGN</u> <i>Planning an observation</i> 8 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 <u>EVALUATION</u> 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	<u>CORRELATIONS</u> <i>Analysing the relationship between co-variables</i> 9 TYPES OF CORRELATION Positive, negative and zero DIFFERENCE BETWEEN CORRELATIONS AND EXPERIMENTS No IV or DV No manipulation of variables <u>EVALUATION</u> 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

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Psychology; RESEARCH METHODS AS

PILOT STUDIES

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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

Eyeball the data

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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

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

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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

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

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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

QUANTITATIVE DATA: Easy to analyse, less biased and narrow in scope

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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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Psychology; RESEARCH METHODS AS

<u>DATA ANALYSIS: DESCRIPTIVE STATISTICS</u> Summarising quantitative data RANGE Subtract the lowest from the highest and add 1 STANDARD DEVIATION Measures how much scores deviate from the mean <u>EVALUATION</u> 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	<u>Mathematical content</u> At least 10% of the assessment marks in psychology will be based on mathematical content. 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 =,>,<,>>,<<
<u>INTRODUCTION TO STATISTICAL TESTING</u> Finding out if your result is meaningful <u>STATISTICAL TESTING</u> 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 <u>THE SIGN TEST</u> 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	<u>PEER REVIEW</u> Scrutiny of research by peers FUNDING Approval of project proposals VALIDATION Quality checks IMPROVEMENTS Minor revisions or rejection of report <u>EVALUATION</u> 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
	<u>PSYCHOLOGY AND THE ECONOMY</u> 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.

<u>ASSESSMENT</u> <u>TYPE</u>	<u>SECTION ON KNOWLEDGE</u> <u>ORGANISER</u>	<u>DATE</u> <u>COMPLETED</u>	<u>SCORE/TOTAL</u> <u>SCORE</u>