AQA A Level Psychology

Knowledge Organiser: Experiments

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- Experiments attempt to establish cause and effect between an IV and DV
- IV (what is manipulated) and DV (what is measured)
- Extraneous variables (what could affect the DV and need controlling)
- Uncontrolled extraneous variables become confounding variables.

Examples of experiments include:

- Asch's: Variable changes (IV) and Conformity (DV)
- Peterson and Peterson: Interval task (IV) and Memory (DV)
- Loftus and Palmer: Critical question (IV) and speed estimate (DV)

Lab Experiments

Where a researcher manipulates the IV and measures a DV under controlled conditions to prevent confounding variables.
Participants generally know they are taking part in a study.

Evaluating Lab Experiments

- High control over extraneous variables increases internal validity.
- High control lowers ecological validity due to the artificiality of research.
- High control means procedures are generally replicable.

Field Experiments

Where a researcher manipulates the IV and measures a DV in natural conditions. The 'field' is considered any location which is not a laboratory.
Participants in a field experiment may not know that they are in a study.

Evaluating Field Experiments

- Natural settings mean higher ecological validity and realism.
- Low control over extraneous variables lowers internal validity.
- There are ethical issues if participants are not aware they are in a study.

Natural Experiments

Researchers do not manipulate the IV. They examine the effect of an existing IV on the DV. This IV is naturally occurring, such as a flood or earthquake.

Evaluating Natural Experiments

- A naturally occurring IV means high levels of external validity
- Naturally occurring IVs mean things that can be studied that would otherwise be unethical to research.

Quasi Experiments

They contain a naturally occurring IV but one which already exists and a difference between people such as gender, age or a personality trait.

Evaluating Quasi Experiments

- Participants cannot be randomly allocated to research conditions.
- There is no control over extraneous variables, making it difficult to be sure that factors such as age, gender or ethnicity have affected the DV.

AQA A Level Psychology

Knowledge Organiser: Observations

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Covert and Overt Observations

Covert: participants are not aware they are being observed
Overt: participants are aware they are being observed

Evaluating Covert and Overt Observations

- Covert observations mean there are fewer demand characteristics, but there are ethical issues involved.
- Overt observations are more ethical, but people can change their behaviour.

Participant and Non-Participant Observations

Participant: the observer also takes part in the activity being observed
Non-participant: the observer does not take part in the activity being observed, watching from a distance instead

Evaluating Participant and Non-Participant Observations

- Participant: closer proximity to participants and richer data is gathered, but people are likely to change their behaviour.
- Non-participant: could result in behaviours being missed, but behaviours are likely to be natural.

Controlled and Natural Observations

Controlled: observation takes place in a lab-style setting
Natural: observation takes place in an unaltered setting in which the observer does not interfere in any way.

Evaluating Controlled and Natural Observations

- Controlled: high control means replicability is possible, but it also means lower ecological validity.
- Natural higher ecological validity but no ability to replicate studies.

Designing Observations

Observers design **categories of behaviour** to operationalise what is being observed. E.g. kicking to measure aggression. These are tallied and can be video recorded too.

Observers can gather data from observations in two ways.

1. Time Sampling: where an observer records behaviour at prescribed intervals, e.g. every 10 seconds, not recording behaviour outside of this.

2. Event Sampling: where an observer records the number of times that the target behaviour occurs, e.g. using a tally.

Other evaluation points

Time sampling methods allow for a better use of time since fewer observations are made. However, not every behaviour of relevance to the investigation will be counted if it occurs in between the time frames allocated.

Event sampling means that every behaviour of interest to the researcher will be counted. However, some behaviours could be missed if there is too much happening at the same time, resulting in some not being coded.

AQA A Level Psychology

Knowledge Organiser: Self-Report Methods

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Questionnaires

Written surveys that measure attitudes or opinions on something. For example, attitudes towards longer sentences for prisoners. They can be made up of closed and/or open questions.

Question Types

Open: no predetermined responses. Respondents can offer as much detail as they want. E.g. How do you feel about the new prime minister? They gather qualitative data.
Closed: predetermined responses for respondents to choose from. E.g. Did you dream last night? Yes, No, Maybe. They usually gather quantitative data.
Avoid leading, ambiguous, or double-barrel questions!

Evaluating Questionnaires

- Closed questions are easy and quicker to analyse and can be analysed statistically. However, they do not generate in-depth responses.
- Open questions generate in-depth data, but this is hard and time-consuming to analyse.
- Gathering completed questionnaires can be time-consuming and not everyone will return them. However, postal returns are an option.
- Participants may want to appear socially desirable in responses.
- Better than interviews since they can be completed confidentially.

Interviews

Questions that are verbally asked by an interviewer and answered by an interviewee. They generally use open questions and gather qualitative data.

Interview Types

Structured: All interviewees are asked the same questions. There is no room for additional avenues to be explored. E.g. a formal job interview.
Semi-Structured: There are some set questions prepared by the interviewer, but areas of interest can be followed up. E.g. a therapist session.
Unstructured: The interviewer prepares one or two questions but the interview snowballs naturally. E.g. a radio interview.

Evaluating Interviews

- Qualitative data is gathered, so it is rich in detail and interviewees can offer elaboration in their answers, however, this makes it hard to analyse.
- Participants may want to appear socially desirable in their responses.
- Better than questionnaires since interviewees can ask for questions to be repeated or rephrased if they are stuck.
- Interviews can gather information about body language, whereas questionnaires cannot.
- Structured interviews are standardised, but other interviews will need to be conducted by a trained interviewer.

AQA A Level Psychology

Knowledge Organiser: Correlations

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Correlations

- Aim to find a relationship between co-variables.
- The direction and strength of a correlation is indicated by a correlation coefficient (between -1 and +1)
- Displayed on a scatter graph.

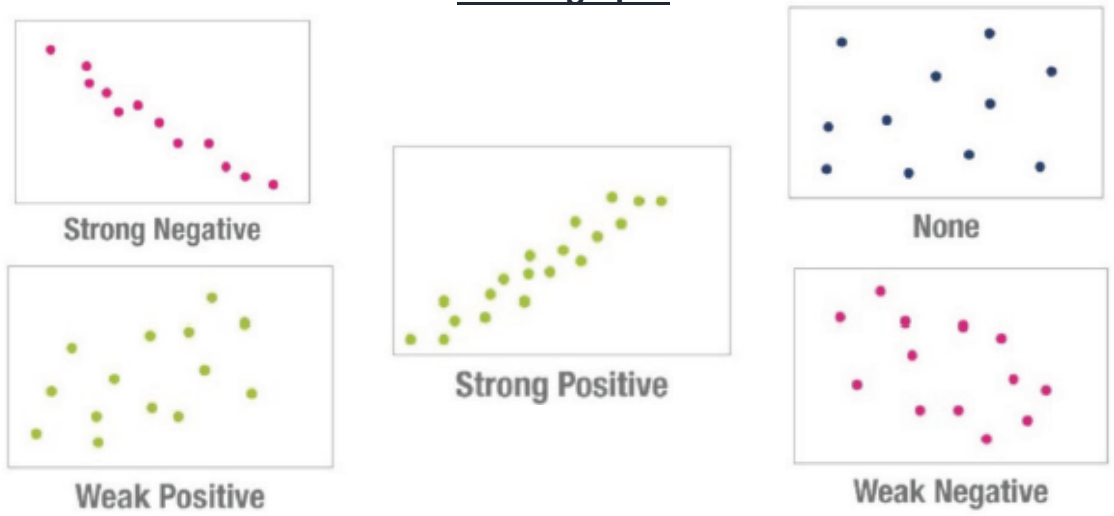
Correlation Types

Positive: Both co-variables travel in the same direction. E.g. As one increases, so does the other.
Negative: Co-variables travel in the opposite direction. E.g. As one increases, the other decreases.
None: No relationship between the co-variables.

Examples

1. As rainfall increases, sales of ice cream decrease (negative)
2. The more miles you drive, the more petrol you use (positive)
3. 0.8 (strong, positive correlation)
4. -0.7 (strong, negative correlation)
5. 0.3 (weak, positive correlation)
6. 0 (no correlation)
7. There will be a positive correlation between stress scores and the number of absentee days from work (directional hypothesis)
8. There will be a correlation between age and shoe size (non-directional hypothesis)

Scattergraphs



Evaluating Correlations

- Correlations provide valuable insight for future research.
- Can be used when a lab experiment would be unethical. Secondary data can be used which alleviates the concern over informed consent.
- It is not possible to establish a cause and effect with correlations.
- Correlations only identify linear relationships and not curvilinear. For example, the relationship between temperature and aggression is **curvilinear**, that is the relationship is positive to a point; however, at very high temperatures, aggression declines.

AQA A Level Psychology

Knowledge Organiser: Content Analysis and Case Studies

Content Analysis

Studying people indirectly. Qualitative data in a range of formats can be used, such as video or audio recordings, or written responses.

Researchers must familiarise themselves with data before conducting any analysis, so that they are confident in their coding system.

Coding

The researcher develops **categories** for the data to be classified. These categories help convert qualitative material into quantitative data.

Thematic analysis helps identify themes in qualitative data and will produce further qualitative data, but this will be much more refined.

Content analysis requires codes to be identified *before* the data is reviewed, but thematic analysis involved themes emerging *from* the data.

Evaluating Content/Thematic Analysis

- Content analysis can produce subjective findings. E.g. Cultural differences may contribute to inconsistent interpretation of behaviour.
- Content analysis and Thematic analysis have high ecological validity. They base conclusions on observations of real behaviour and communications.
- Content Analysis is easier to assess reliability because other researchers can use the coding system to ensure findings are consistent.

Case Studies

Purpose: to provide a detailed analysis of an individual, establishment or real-life event.

Method: A case study can use experimental or non-experimental methods to collect data and are often used where there is a rare behaviour being investigated.

Examples

A case study allows data to be collected and analysed on something that psychologists have very little understanding of. E.g. HM, Phineas Gage, Little Albert and Little Hans.

Evaluating Case Studies

- By only studying one individual, an isolated event or a small group of people it is very difficult to generalise any findings to the wider population.
- The researcher's own subjectivity may pose a problem. A major limitation is that research bias and subjectivity can interfere with the validity of the findings/conclusions.
- Case studies offer the opportunity to unveil rich, detailed information about a situation.
- Case studies can be used in circumstances which would not be ethical to examine experimentally. For example, the case study of Genie (Rymer, 1993).

AQA A Level Psychology

Knowledge Organiser: Sampling Techniques

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Terminology

Target population: the people a sample is supposed to represent
Sample: a group used in research that represents a target population
Sampling technique: a method used for gathering the sample

Sampling technique: Random

Every person in the target population has a chance of being in the sample. E.g. all names of the target population are entered into a computer system and it generates a list of names who will become the sample.

- There is no bias in the selection of the sample
- People could say no to taking part so it could be time-consuming
- The sample generated could be unrepresentative (E.g. all male)

Sampling technique: Systematic

A predetermined system is used to select participants. E.g. every fifth person is chosen.

- It is not affected by researcher bias/choice of participants
- The sample may be unrepresentative if every *Nth* person has similar traits, such as being right-handed.

Sampling technique: Volunteer

Participants self-select to take part in a study by either volunteering when asked or by responding to an advert. E.g. responding to a poster in a café.

- It is an easier and quicker method than random or stratified sampling
- The sample may not be representative. E.g. only unemployed people could volunteer, or people who are interested in psychology.

Sampling technique: Opportunity

The sample consists of people from the target population who are available. E.g. the researcher approaches people and asks them to take part in a study.

- It is easier than methods such as random or stratified sampling
- The sample may not be representative of the target population
- There could be researcher bias in who is approached
- Not everyone has a chance of being selected. People who are not in the area will not be asked to take part.

Sampling technique: Stratified

Subgroups within a population are identified and participants are obtained from each stratum in proportion to the target population.

E.g. if a class of A-level psychology had 20 students: 18 males and 2 females, a sample of 10 would need to consist of 9 males and 1 female, to represent this population proportionally.

- It is not affected by researcher bias, and the sample is likely to be representative
- Ensuring that the subgroups/strata in the target population are all accurately identified is a difficult and time-consuming task.

AQA A Level Psychology — Knowledge Organiser: Experimental Designs and Pilot Studies

Independent Groups/Measures Design

Uses two separate groups of participants (each person only takes part in one condition).

Participants should be randomly allocated to conditions to remove bias and investigator effects.

- Time-consuming since twice the number of participants need to be gathered, compared to repeated measures.
- Large number of participants means more participant variables can affect outcomes.
- Order effects are avoided since participants only take part in one condition of the study

Repeated Measures Design

Uses one group of participants, who take part in all conditions of a study.

Counterbalancing can be used to reduce order effects.

- Fewer participants are required therefore the impact of participant variables is minimised.
- Each participant offers more than one piece of data, so any withdrawals can result in loss of data.
- Repeated use of participants can lead to order effects (E.g. tiredness, boredom, rehearsal).

Matched Pairs Design

Uses two groups but each person in one group is matched to someone in the other group (E.g. age).

Participants are matched on relevant traits before being randomly allocated to conditions.

- Participants are matched on relevant traits therefore participant variables are minimised.
- Time-consuming since twice the number of participants need to be gathered, compared to repeated measures.
- Order effects are avoided since participants only take part in one condition of the study.
- It is a time-consuming and difficult process to match participants on relevant traits.

Pilot Studies

Pilot studies are small-scale prototypes of a study.

They are carried out before the full research to find out if there are any problems.

For example:

- Do the participants have enough time to complete the tasks?
- Are the instructions clear?
- Are the behavioural categories used accurate and relevant?
- Are the tasks given to participants too easy/too hard?
- Are the questions clear or ambiguous?

A pilot study uses a sample that (although smaller) is representative of the target population that will be used in the main research.

The goal is to improve the validity of the research.

AQA A Level Psychology

Knowledge Organiser: Control in Research

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The Goal

To identify and control extraneous variables, so they do not become confounding variables. E.g.
Situational variables – variables connected with the research situation. For example, the temperature, time of day, lighting, materials, etc.
Participant variables – variables connected

Random Allocation

Participants should be randomly allocated to groups to reduce participant variables (e.g. individual differences).

E.g. participant names are placed into a computer name generator. The 1st name generated is placed in group 1, and the 2nd is placed in group 2. This repeats until everyone is assigned to a group.

Counterbalancing

Used to combat the problem of order effects with repeated measures design.

The sample is split in half with one half completing the two conditions in one order and the other half completing the conditions in the reverse order. Any order effects should be balanced out by the opposing half of the participants.

Randomisation

This is when all aspects of the research are dictated by chance and not by the researcher, for example, the order of words in a list.

Standardisation

The process in which all situational variables of a procedure used in research are kept the same. Standardisation also enables research to be replicated.

E.g. a researcher can ensure that all participants are given standardised instructions, standardised time to complete a test and use a standardised set of questions in an interview.

Demand Characteristics

They occur when participants try to make sense of the research. They may change their behaviour to support or disrupt an investigation.

They are controlled by using a **single-blind technique,** where participants are unaware of the IV, or which condition they are taking part in.

E.g. in medical tests when comparing the effects of a therapeutic drug with a placebo, only the researcher knows which is which.

Investigator Effects

Where a researcher (consciously or unconsciously) acts in a way to support their prediction. E.g. interpreting results/behaviours with bias.
The investigator's age, gender, attractiveness (and other traits) can affect participant behaviour.

This can be controlled by using a **double-blind** technique where neither the participant nor researcher knows the identity of the IV or experimental groups.

AQA A Level Psychology

Knowledge Organiser: Peer Reviews, and Implications for the Economy

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Peer Review

What is it?

An independent assessment process that takes place before a research study is published. Undertaken by other experts in the same field of psychology, anonymously.

Aims?

To provide recommendations about whether research should be published in the public domain or not, or whether it needs revision.
To check the validity and originality of the research.
To assess the appropriateness of the procedure and methodology.
To judge the significance of the research in the wider context of human behaviour.
To inform the allocation of future research funding.

Evaluating Peer Reviews

- Since peer reviewers are anonymous, they could criticise rivals in their field.
- Limited funding for new research creates competition and could breed jealousy amongst researchers.
- It is sometimes difficult to find a suitable peer, especially if conducting new or groundbreaking research.
- The process helps to prevent any substandard research from entering the mainstream which protects the reputation of psychology.
- Using peers means there is less opportunity for plagiarised work or duplications of research to be published.

Implications for the Economy

The economy is concerned with how members of society produce, share and consume goods and services.
Implications refer to the ability to interpret findings in terms of their value or effect on society.

Examples include:

- Bowlby's attachment research influenced limited free daycare for children under 3 years old. This will cost the government but allow the workforce to return to work rather than stay home.

- The cognitive interview has been successful at improving the accuracy of eyewitness testimonies. This means that there is a greater chance of the police prosecuting the right criminal from the offset. These techniques can reduce wasted money on wrongful arrests, questioning and court hearings, saving the criminal justice system money.

- The development of treatments for disorders, such as OCD will restore the quality of life for the sufferer. This will impact their ability to work, meaning less time off work due to ill health and/or less reliance on government-funded incapacity benefits. Likewise, the NHS will save money if treatments are successful as fewer incidents of relapse, requiring medical attention, are likely to occur.

AQA A Level Psychology

Knowledge Organiser: Ethics

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Ethical Guidelines and Issues

Ethical issues: considerations that researchers need to consider before, during and after the research is conducted

Ethical Guidelines: The BPS code of ethics are guidelines that researchers need to consider when undertaking psychological research, such as the right to withdraw, and informed consent.

Deception

When information is deliberately withheld from participants or they are knowingly misled. E.g. using confederates or lying about the aims.

Deception means participants can't give informed consent.

Control: At the end of the study the participants should be fully debriefed and told the true aim of the research.

Informed Consent

When participants are told the real aims and expected outcomes of a study.

Control: Use alternatives to informed consent, such as:

- Presumptive consent: if others state they would take part in the research it can be presumed that future participants would do the same.
- Prior general consent: use participants who have been in previous studies where they were deceived. This, in effect, means that they will have given consent for being deceived.

Protection from Harm

Participants should not experience any psychological or physiological harm during a study and should not change in any way.

E.g. they should not leave with lower self-esteem, they should experience pain, and they should not feel ridiculed or embarrassed.

Control: The researcher should remind participants of their right to withdraw throughout and after the research and terminate the study if needed.

Note: if the level of harm is considered 'typical' of daily life, this is accepted.

Others

Right to withdraw: participants should be reminded of their right to withdraw themselves or their data from the research at any point.
Privacy: the right of individuals to decide how information about them will be communicated to others. Information should be confidential.
Debrief: all participants should be debriefed at the end of the study, including revealing the real aims of the study, checking on the welfare of participants, offering support, and answering questions about the study.

Consider

Is a debrief effective if a participant is not listening or does not understand?
Is informed consent important enough to risk lowering internal validity?
Can people be harmed if the benefits outweigh the risks?
Are there times when breaking ethical guidelines is justified?

AQA A Level Psychology

Knowledge Organiser: Reliability and Validity

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Reliability

A measure of consistency

Assessed through:

- Inter Observer reliability: when two or more observers observe and record behaviour consistently. Their observations (or scores) are correlated. +0.8 or higher indicates reliability.
- Test-retest reliability: the same people repeat a measure on different occasions. Results from both are correlated and +0.8 or above indicates reliability.

Validity

The extent to which something is true of legitimate.
Internal validity: whether a researcher measures what he/she intended to.
External validity: whether results can be generalised outside of the sample (population validity) or the situation (ecological validity).

Assessed through:

- Face validity: does the test appear to measure what it says it measures?
- Concurrent validity: the performance of the test/tool is compared to a test that is already recognised and trusted within the same field.

Improving Reliability

Questionnaires: changing open to closed questions can minimise ambiguity.

Interview: Ensuring the same interviewer is conducting all interviews will help reduce researcher bias. If not, then training should be provided to limit the potential bias.

Experiments: researchers can increase control over extraneous variables.

Observations: operationalise the behavioural categories and ensure there is no overlap between categories.

Improving Validity

Experiments: control groups are used to see the impact of an IV, and standardised instructions and procedures help improve validity. Single-blind and double-blind procedures are also used to improve validity.

Questionnaires: Researchers can include lie scales to check for consistency in responses. Two questions or items that are asking the same thing, but in opposite ways.

Observations: Covert observations can reduce bias and increase validity, as can using operationalised behavioural categories that do not overlap.

AQA A Level Psychology

Knowledge Organiser: Key Features of Science, and Reports

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Psychologists use a conventional format for report writing.

Abstract

The 1st section is a summary of the key points of the research (roughly 150–200 words) that help readers get an overview of the study.

Introduction

A literature review to establish gaps in existing research. It results in a research aim and hypothesis.

Method

This is written in sufficient detail so that the reader would be able to replicate the study. It includes information about the design (e.g. group design) sample (method, target population), materials (e.g. memory test), procedure (step by step) and ethics (considerations in the study).

Results

Presenting results in summary tables and graphs, including inferential analysis.

Discussion

Results are interpreted in a non-statistical form. A discussion generally includes how findings compare with initial hypotheses, how research compares with other, relevant research, and implications for future research.

References

Acknowledge other researchers, and guide readers to sources. E.g.
Beck, A. (1967). *Depression: clinical, experimental and theoretical aspects.* Pennsylvania: University of Pennsylvania.

What makes psychology a science?

Objectivity and the Empirical Method

Objectivity: researchers must not let their personal opinions, judgements or biases interfere with the data.

Empirical methods: the idea that knowledge is gained from direct experiences in an objective, systematic and controlled manner to produce quantitative data.

Replicability and Falsifiability

Replicability: when research is repeated and consistent results are found. This makes research robust.

Falsifiability: the idea that a research hypothesis could be proved wrong. This helps science to keep advancing with new findings and paradigms.

Theory Construction and Hypothesis Testing

To construct a theory, evidence to support this notion needs to be collected first. If a researcher suspects something to be true, they need to devise an experiment that will allow them to examine their ideas.

When designing a hypothesis, it must be objective and measurable.

Paradigm and Paradigm Shift

Paradigm: a set of shared assumptions/methods within a particular discipline.
Paradigm shift: a psychological revolution leading to a new widely accepted, dominant paradigm.

AQA A Level Psychology

Knowledge Organiser: Data in Psychology

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Primary Data

Data collected for a specific reason and reported by the original researcher, or data that the participant reports directly to the researcher or is witnessed first-hand.

- Data is authentic since it is collected is designed to suit the aims of the research
- The data is fit for the purpose of the investigation
- It can take a long time and effort to gather primary data.

Secondary Data

Data collected by other researchers for a purpose other than the investigation in which it is currently being used. In other words, it is data which already exists. E.g. data from Government reports.

- Less time-consuming to gather since it already exists.
- It may not be for for purpose since it is being used for unintended purposes.
- Very little of the data may be relevant to the aims of the new study.

Qualitative Data

Non-numerical data. It is expressed in words, e.g. an interview transcript. Questions that gather qualitative data gather words. E.g. how is your mood today?

- It is harder and more time consuming to analyse than quantitative data.
- The data is more insightful about human behaviour than quantitative data.
- Analysis can be subjective (e.g. thematic analysis).

Quantitative Data

Numerical data that can be statistically analysed, such as percentages. Questions that gather quantitative data gather numbers. E.g. How many hours do you sleep for?

- It is easier to analyse than qualitative data and statistical significance can be worked out.
- The data may lack the insight that qualitative data offers.
- Analysis is more objective than qualitative data analysis.

Level of data: Interval

Data where intervals between each value are equal in measurement.

Scientific measurements, such as length (centimetre), time (mins or hours) or weight (lbs or kilos).

Level of data: Ordinal

Data that is ordered in some way and the intervals between the data are not equal.

E.g. Attitudes towards politics on a scale of 1-10, or positions of high scorers on a leaderboard.

Level of data: Nominal

Categorical data. E.g. the number of males and females who are left or right-handed.

Discrete data: participants will only appear in one category.

AQA A Level Psychology

Knowledge Organiser: Descriptive Statistics

tutor2u

Measures of Central Tendency

Calculations to find the average of a data set.

1. Mean (add up all scores and divide by the total number of scores)
2. Mode (the most frequently occurring score)
3. Median (the middle value once data is sorted)

- The mean is skewed by anomalies, but the mode and median are not.
- The mean uses all data in a set, but mode and median do not.

Measures of Dispersion

Calculations to find the spread/variance/distributions of data.

1. Range (highest – lowest score)
2. Standard Deviation (how far scores are from the mean)

- The range is easier to perform than the standard deviation
- The range is skewed if high/low values are anomalies
- Standard deviation is robust but skewed by inaccurate means.

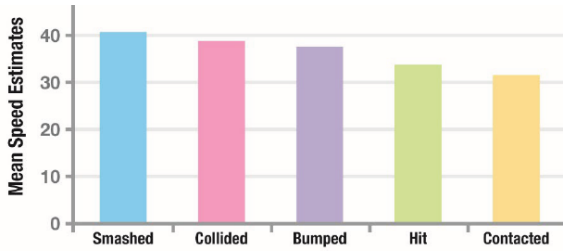
Percentages

Calculate %: E.g. Number of participants who improved on a test × 100, divided by the total number of participants.

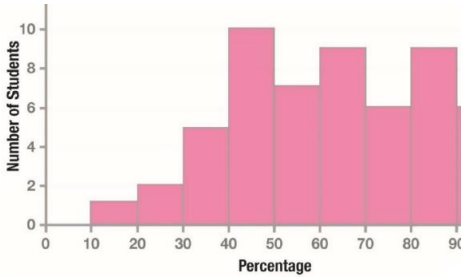
% increase: the increase between the two numbers being compared must be calculated. Then this should be divided by the original figure and multiplied by 100.

To calculate a % decrease, firstly the decrease between the two numbers being compared must be calculated. Then this should be divided by the original figure and multiplied by 100.

Bar chart: presents discrete data

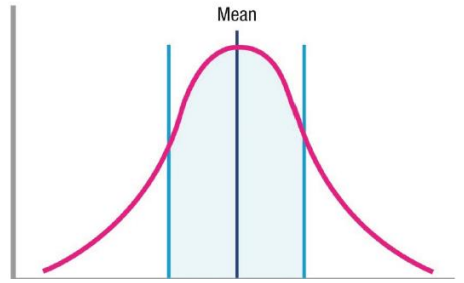


Histogram: presents continuous data

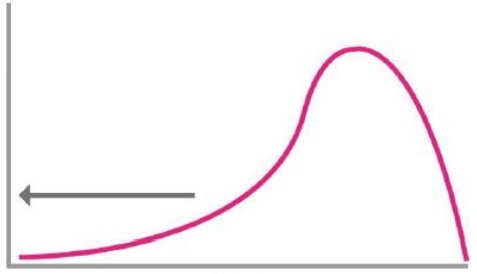


Scattergraph: presents correlational data

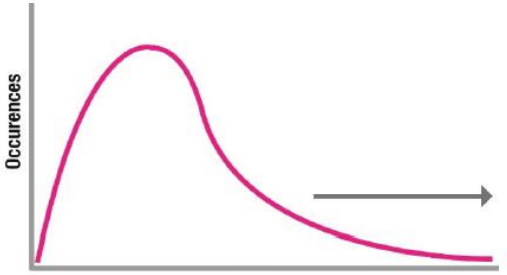
Normal distribution: indicates that most scores are close to the mean (mean, mode, and median are similar)



Negative Skew: mode and median are higher than the mean



Positive Skew: mode and median are lower than the mean



AQA A Level Psychology

Knowledge Organiser: Inferential Testing

tutor2u

Choosing Stat Tests

The choice depends on experimental designs (related or unrelated) purpose of the test (looking for a difference or correlation) and the level of data (interval, ordinal, nominal).

- **Mann Whitney:** Unrelated design, ordinal data, test of difference
- **Wilcoxon**: Related design, ordinal data, test of difference
- **Related T-Test:** Related design, interval data, test of difference
- **Unrelated T-Test:** Unrelated design, interval data, test of difference
- **Sign Test:** Related design, nominal data, test of difference
- **Chi Square:** Unrelated design, nominal data, test of difference or association
- **Spearmans Rho**: Ordinal data, test of correlation
- **Pearsons:** Interval data, test of correlation

P =< 0.05

The probability of results being due to chance or error is equal to or less than 0.05 (5%).

The 5% level is used to strike a balance between the risk of making Type I and 2 errors.

Type 1 errors: result in alternate hypotheses being accepted when it should not be. This leads to a false positive. This can occur when the significance level is too lenient.

Type 2 errors: result in alternate hypotheses being rejected when it should not be. This leads to a false negative. This can occur when the significance level is too strict.

LEVEL OF SIGNIFICANCE FOR A ONE-TAILED TEST		
	.05	.025
LEVEL OF SIGNIFICANCE FOR A TWO-TAILED TEST		
	.10	.05
N		
5	0	
6	0	0
7	0	0
8	1	0
9	1	1

Note: For the sign test to be significant the calculated value of S must be equal to or less than the critical value

Critical Value Table (left)

- Identify hypothesis: one-tailed (directional) or two-tailed (non-directional)
- Select the significance level relevant to the hypothesis
- Find N (number of participants) or DF (degrees of freedom)
- Identify the critical value
- Read the table rule (located under the table)
- Compare the calculated value to the critical value and follow the rule
- Write a statement about whether you can/cannot accept the hypothesis

Note: at this point, check lower levels of significance and see if results are still significant.