Operational definitions

Lesson 2.2.3 | AS research methodology

Core ideas

An operational definition states exactly how a variable is measured or manipulated in a study.

Vague concepts such as stress, memory or aggression need clear observable indicators.

Operationalising an independent variable means defining the exact conditions being compared.

Operationalising a dependent variable means defining the exact score, count or behaviour being recorded.

Clear operational definitions make studies easier to repeat and reduce disagreement between researchers.

A poor operational definition can weaken validity if it does not really capture the concept being studied.

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Key terms

Operational definition: A precise statement of how a variable is measured or manipulated.

Operationalise: Turn a broad idea into a clear research measure or condition.

Observable behaviour: Behaviour that can be seen or recorded directly.

Measure: A specific way of recording data.

Manipulation: The exact change made to an independent variable.

Replication: Repeating a study to check whether similar results are found.

Validity: How well a measure captures what it claims to measure.

Reliability: How consistent a measure or procedure is.

Further detail and evidence

Operationalisation turns an abstract construct into a reproducible manipulation or measurement. Specify units, materials, timing, scoring and category boundaries. A precise measure can still lack validity if it captures only a poor substitute for the intended concept.

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Applying the ideas

Operationalise helping as approaching and physically assisting within a stated observation period, recording latency in seconds. Operationalise questionnaire stress as the total on named items over a specified week. These measure different aspects of behaviour and experience; neither automatically captures everything relevant.

Worked example: Write an operational definition for stress in a study of students before exams. Stress could be operationalised as each student's score on a 20-item exam-anxiety questionnaire completed one week before the exam. This is measurable because every participant receives a numerical score using the same items. It is clearer than simply saying students are 'stressed' because researchers know exactly what data to record.

Worked example: Assess why operational definitions matter when studying aggression. Operational definitions matter because aggression is a broad idea that different observers might interpret differently. If researchers define aggression as the number of hits, kicks and shouted insults in a set time, observers can record the same behaviours more consistently. A limitation is that this definition may miss less visible forms of aggression, so validity still needs checking.

Evaluation and connections

A broad aggression category may be ambiguous; an overly narrow one may miss important acts. Pilot categories with independent observers. Word count is a reproducible report-length measure but not exact dream duration. Evaluate the link between the indicator and the construct as well as consistency.