Research Designs

Major Approaches to Research

Experimental Research	Assesses causal relationships by manipulating an independent variable and controlling extraneous factors
Quasi-experimental Research	Involves an intervention but lacks full experimental control, especially random assignment
Non-experimental Research	Observes naturally occurring groups or variables without manipulation
Correlational Research	Quantifies relationships between variables to identify associations without inferring causality
Descriptive Research	Documents and summarises characteristics of a sample without examining relationships or effects
Qualitative Research	Explores experiences, meanings, and processes using non-numerical data (e.g. interviews, focus groups, thematic analysis)

Experimental Designs

- Experimental designs test **causality** by manipulating an independent variable and measuring its effect on a dependent variable.

Key Features

- **Random assignment** distributes individual differences evenly across groups, increasing **internal validity**.
- **Manipulation of the independent variable** ensures the researcher creates conditions needed to test a causal mechanism.
- **Control of extraneous variables** (e.g. holding conditions constant) removes alternative explanations for group differences.
- **High internal validity** because randomisation + control isolates the true effect of the IV.
- **Two major forms:**
    - **Between-subjects designs** compare different participants across conditions.
    - **Within-subjects designs** expose the same participants to all conditions, reducing variability due to individual differences.

Quasi-Experimental Research

Definition

- Quasi-experiments involve **manipulation** or an **intervention** but **lack random assignment**, reducing control over confounding variables.

Key Features

- Includes interventions (e.g. school-based health program) delivered to **intact groups** (classes, clinics, communities).
- Researchers attempt to **approximate experimental control** using matching, statistical controls, baseline data, or multiple time points.
- **Internal validity is lower** than true experiments due to potential confounding.
- **External validity may be higher** because interventions occur in real-world settings.

Experiments vs Quasi-Experiments

Experiments

- Manipulate the independent variable.
- Use **random assignment** to groups.
- Offer **high control** over extraneous variables → **high internal validity**.
- External validity varies depending on artificiality of the setting.

Quasi-Experiments

- Manipulate the independent variable.
- **No random assignment**; participants remain in pre-existing groups.
- Some attempt to control extraneous variables, but validity threats remain.
- External validity varies but often strong due to real-world implementation.

Non-Experimental Research

- Observes relationships between variables **without manipulation** and using **intact groups** (e.g. age groups, school cohorts, pubertal timing groups).
- Useful when manipulation is impossible, unethical, or impractical.
- **Internal validity is low** because confounds cannot be controlled.
- **External validity is high** because variables are studied in their natural context.

Correlational Research

Definition

- Measures the **strength and direction** of association between two continuous variables (e.g. self-esteem and body dissatisfaction).

Strengths

- **Descriptive**: summarises how variables move together.
- **Non-intrusive**: no manipulation or intervention required.
- **High external validity**: variables studied exactly as they occur naturally.

Weaknesses

- **No causal inference** because relationships may be due to a third variable.
- **Third variable problem**: unmeasured variables may explain the association.
- **Directionality problem**: cannot determine which variable influences the other.
- **Low internal validity** because of limited control over confounding variables.

Key Correlational Problems

Third Variable Problem

- A correlation between **body dissatisfaction** and **binge eating** (e.g. r = .50) may be explained by **depression**, **dieting behaviour**, or other unmeasured variables.

Directionality Problem

- A correlation between **body dissatisfaction** and **depression** (e.g. r = .60) does not reveal whether dissatisfaction leads to depression or vice versa.

Descriptive Research

Descriptive Research

- Descriptive research **documents and summarises characteristics of individuals or groups** without examining relationships or causal effects.
- **Observational research** systematically records behaviour or phenomena in natural or controlled settings to describe what occurs.