

Research methods, class practicals and the research proposal (Paper 2; IA)

International Baccalaureate · IB Diploma · Psychology · SL

Research methods, class practicals and the research proposal

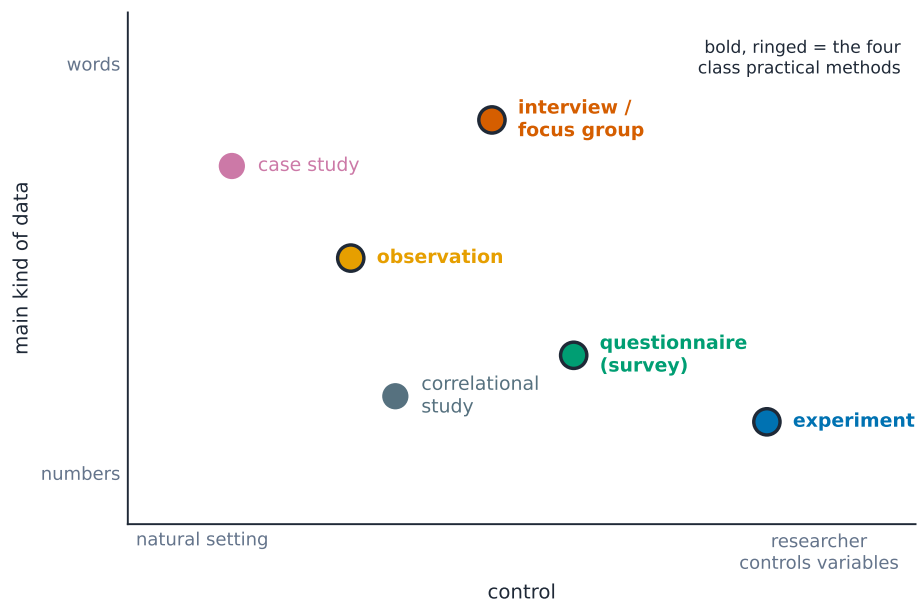
IB Diploma Programme Psychology SL (the course first assessed in 2027). This topic covers how psychologists collect evidence. You need it for three parts of the assessment. In your **class practicals** you carry out at least four small studies, one with each of four methods: an experiment, an interview or focus group, an observation, and a questionnaire. Paper 2 Section A asks four questions about one of your practicals, and Section B asks you to discuss an unseen study using the concepts. The **internal assessment** is a **research proposal**: you plan a study for a **population of interest** but do not carry it out.

In 2015, 270 researchers tried to repeat 100 published psychology studies. Only about a third (36%) found a significant result again. Some of the original studies had small samples, flexible analyses or biased designs. Research methods are not a list to memorise; they decide which findings you can trust.

Must-know for this topic:

Idea	Key content
methods	experiment, questionnaire, interview and focus group, observation; also correlational study and case study
experiments	IV, DV, hypotheses, designs, controls, types of experiment
sampling	random, opportunity, self-selected, purposive, snowball
quality	bias, validity, reliability, credibility, generalisability
ethics	consent, withdrawal, deception, debriefing, harm, confidentiality
assessment	Paper 2 Sections A and B; the research proposal

Six research methods



Six methods placed by control and by kind of data; the four ringed ones are used in class practicals

Method	What it does	Strength	Limit
experiment	changes one variable and measures another	can show cause	often artificial
questionnaire	many people answer the same questions	quick, large samples	people may not answer honestly
interview / focus group	people talk about their experience	rich, detailed data	hard to compare; small samples
observation	records what people actually do	real behaviour	observer bias; no cause
correlational study	measures how two variables move together	shows relationships	no cause
case study	studies one person or group in depth	rare cases, rich detail	may not apply to others

Quantitative data are numbers; **qualitative data** are words, pictures or descriptions. Experiments and questionnaires mostly produce quantitative data; interviews mostly qualitative data.

Experiments

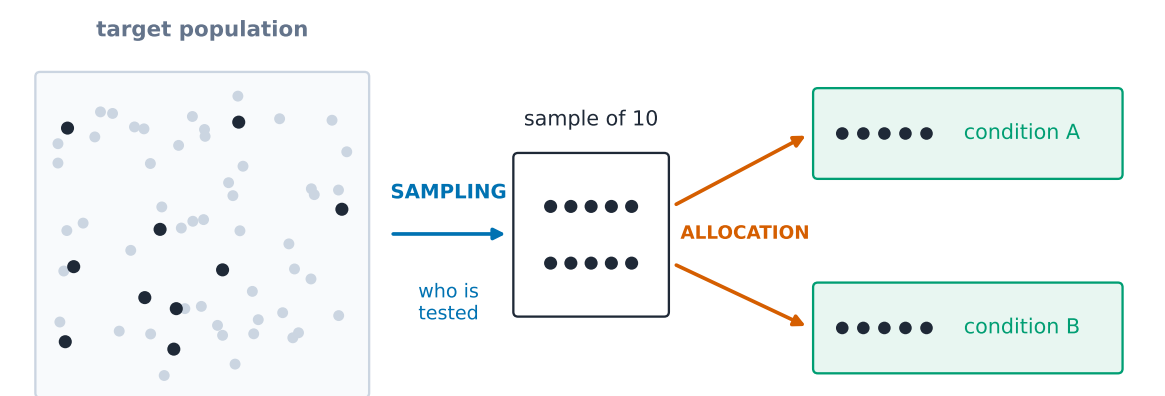
An **experiment** changes the **independent variable** (IV) and measures the effect on the **dependent variable** (DV), while keeping other variables the same. A variable that changes with the IV and also affects the DV is a **confounding variable**.

Hypotheses must be precise. For a study on music and memory:

- **Research hypothesis** : students who learn 20 words in silence will recall more words than students who learn them with music playing.
- **Null hypothesis** : there will be no difference in recall, or any difference will be due to chance.

There are three **experimental designs** :

Design	Meaning	Strength	Problem and fix
independent samples	different people in each condition	no order effects	group differences; fix: random allocation
repeated measures	the same people do both conditions	no group differences	order effects; fix: counterbalancing
matched pairs	similar people paired, one in each condition	fewer group differences	slow to match



Random sampling makes the sample representative; random allocation makes the groups comparable.

Sampling chooses who takes part; allocation decides which condition each person does

A **laboratory experiment** has high control but may not feel real (low **ecological validity**). A **field experiment** happens in a real setting. In a **natural experiment** the researcher does not choose the IV (for example, a new school timetable), and in a **quasi-experiment** the IV is a fixed trait such as age or gender, so participants cannot be randomly allocated.

Sampling

Technique	How	Main problem
random sampling	everyone has an equal chance	needs a full list of the population
opportunity sampling	whoever is available	may not represent the population
self-selected sampling	volunteers answer an advert	volunteers may be different
purposive sampling	people chosen for a feature	the researcher's choice may be biased
snowball sampling	participants recruit others	people know each other, so they are alike

Purposive and snowball sampling are common for interviews, when the researcher needs people with a special experience.

Questionnaires, interviews and observations

A **questionnaire** can use closed questions (yes/no, or a **Likert scale** from 1 "strongly disagree" to 5 "strongly agree") or open questions. Closed answers are easy to count; open answers give reasons. People may give the answer that sounds good: **social desirability bias**. Anonymous questionnaires reduce it.

An **interview** can be structured (fixed questions), semi-structured (an interview guide, with follow-up questions) or unstructured. A **focus group** is an interview with about 6 to 10 people at once, where people's answers spark each other's ideas, but a strong speaker can lead the group. Interviews are recorded, transcribed and analysed by finding themes.

An **observation** can be naturalistic (a real setting) or controlled, overt (people know) or covert (they do not), and participant or non-participant. Observers use a **behaviour checklist** with clear categories, for example "hits", "shares a toy", "helps". Two observers record the same sessions, and high agreement shows **inter-rater reliability**.

Judging quality

Issue	Meaning	Example and fix
participant bias	participants change their behaviour	demand characteristics : they guess the aim; fix: hide the aim, debrief later
researcher bias	the researcher's expectations affect results	fix: a double-blind design or a second coder
generalisability	results apply to the population	a random, large sample helps
credibility	qualitative findings reflect what participants meant	fix: triangulation (several methods or researchers)
transferability	qualitative findings apply to other settings	fix: describe the setting in detail

Ethics

Every study must follow ethical rules. The main ones are **informed consent** (people know what they agree to; parents consent for children under 16), the **right to withdraw** at any time, no **deception** unless it is necessary and harmless, **debriefing** (telling participants the true aim afterwards), **protection from harm** and **confidentiality** (no names in the report). Responsibility, one of the six concepts, asks you to apply these rules to a particular study.

Paper 2

Section A asks four questions about one class practical: describe what you did (4 marks), explain a concept in relation to it (4 marks), compare it with another method (6 marks) and design a study with a different method on the same topic (6 marks).

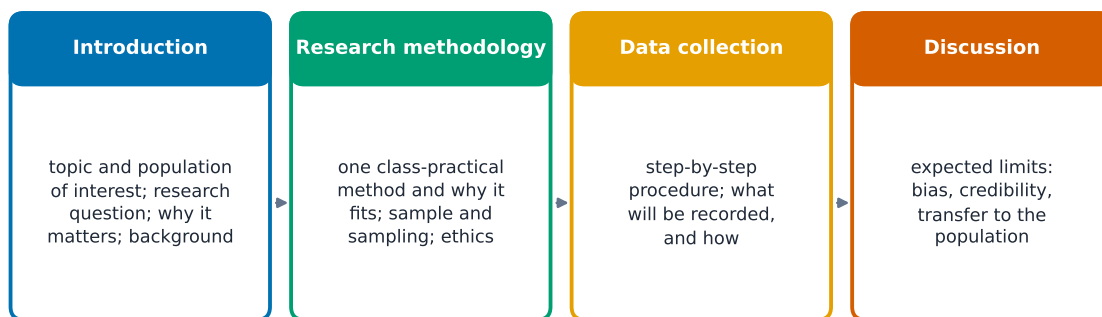
Worked example. *Describe how you used an interview or focus group in your class practical.* (4 marks)

Our aim was to find out how IB students experience stress before mock exams. We used purposive sampling to choose four DP2 students who had just taken mocks. Each gave informed consent. We ran semi-structured interviews of about 15 minutes with six open questions, such as "What did you do the evening before your first exam?", and recorded them. We transcribed the recordings and coded them, and two themes appeared: lack of sleep and comparing scores with friends.

Section B (15 marks) gives you an unseen study. You discuss it with two or more of four concepts: bias, causality, measurement and responsibility. For each concept: point to a detail in the study, explain its effect on the conclusion, and suggest a better design.

The research proposal (internal assessment)

The internal assessment is a research proposal of 24 marks. You choose a topic and a population of interest (for example, international students in their first year in China), and plan a study with one of the four class-practical methods. You argue for every choice, but you do not collect data.



You plan the study in full and argue for each choice; you do not collect the data.

The four parts of the research proposal

Example plan: *How do first-year international students in Ningbo experience making friends?* Method: semi-structured interviews, because the question is about experience and needs rich data. Sample: purposive sampling of eight students, through the university's international office. Ethics: informed consent, a right to withdraw, no names, and information about counselling services. Discussion: the researcher's own views could shape the questions (bias), so a second researcher codes the transcripts; eight students from one university may not transfer to other cities.

Checklist

- The six methods, with a strength and a limit of each; quantitative and qualitative data.
- IV, DV, confounding variables; research and null hypotheses; the three designs, counterbalancing and random allocation; types of experiment.
- Five sampling techniques with their problems.
- Questionnaires (Likert, social desirability), interviews and focus groups, observations (checklists, inter-rater reliability).

- Participant and researcher bias; generalisability, credibility, transferability, triangulation.
- The ethical rules, and how responsibility applies them.
- Paper 2 Section A (4, 4, 6, 6 marks) and Section B (15 marks, two or more concepts).
- The research proposal: four parts, one class-practical method, planned but not carried out.