3.2 Sampling, other methods, quality and ethics

Name: _____ Class: _____ Date: _____ **Total: 30 marks**

KEY WORDS random sampling • purposive sampling • focus group • social desirability bias • inter-rater reliability • triangulation • informed consent

Objective

Build the skills to answer exam questions on **sampling** , questionnaires, interviews, focus groups and observations, how to judge the quality of research (bias, generalizability, credibility, transferability) and **ethics** , with Paper 2 Section A tasks.

You must be able to:

- identify random, opportunity, self-selected, purposive and snowball sampling, and their problems
- compare questionnaires, interviews, focus groups and observations
- explain participant bias, researcher bias, generalizability, credibility and transferability, with fixes
- calculate and explain inter-rater reliability
- apply ethical guidelines to a planned study

1 Key knowledge and worked examples

Sampling

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

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- **Questionnaire**: closed questions (yes/no, a **Likert scale** from 1 to 5) or open questions. **Social desirability bias**: people give the answer that sounds good; anonymity reduces it.
- **Interview**: structured, semi-structured (a guide with follow-up questions) or unstructured. **Focus group**: about 6 to 10 people; answers spark ideas, but a strong speaker can lead the group. Record, transcribe and find themes.
- **Observation**: naturalistic or controlled; overt or covert; participant or non-participant. Use a **behaviour checklist**. Two observers' agreement shows **inter-rater reliability**.

Judging quality

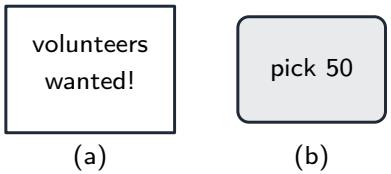
issue	meaning	fix
participant bias	participants change behaviour, e.g. guess the aim (demand characteristics)	hide the aim, debrief later
researcher bias	expectations affect results	double-blind design; a second coder
generalizability	results apply to the population	a large, random sample
credibility (qualitative)	findings reflect what participants meant	**triangulation**: several methods or researchers
transferability (qualitative)	findings apply to other settings	describe the setting in detail

Ethics

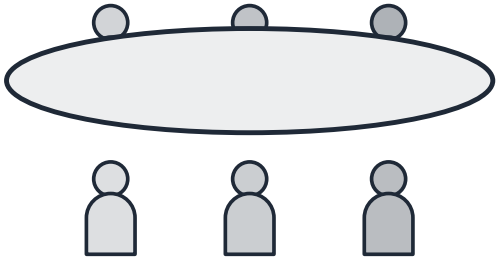
Informed consent (parents for under-16s), right to withdraw, no deception unless necessary and harmless, debriefing, protection from harm, confidentiality. In 2015, only 36 % of 100 published studies repeated their significant result; registering the plan before collecting data is one fix.

2 Practice

2.1 Identify the sampling technique: (a) a researcher puts up a poster asking for volunteers; (b) every student's name is put into a computer that picks 50. [2]



2.2 Explain **one** strength and **one** limitation of using a **focus group** to study how students feel about online lessons. [4]



2.3 Explain **social desirability bias** in a questionnaire about cheating, and **one** way to reduce it. [2]

Have you ever copied homework?

☐ yes ☐ no

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2.4 Two observers coded the same 20 time intervals of children's play. They agreed on 17 intervals. Calculate the percentage agreement and explain what it shows. [3]



2.5 Outline **two** ethical issues in interviewing 15-year-old students about loneliness, and how to deal with each. [4]

- ☐ consent
- ☐ withdraw
- ☐ harm
- ☐ confidential

3 Exam-style questions

3.1 *(Paper 2 Section A style.)* A class wants to study **how first-year IB students experience homework stress**.



(a) Design a study that uses **semi-structured interviews** to investigate this topic. [6]

(b) Compare semi-structured interviews with questionnaires for this topic. [6]

(c) Explain how **triangulation** could improve the credibility of the findings. [3]

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Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

2.1

(a) self-selected sampling; (b) random sampling

2.2

strength: students' answers spark each other's ideas, giving rich detail about feelings; limitation: a confident student may lead the group, so quieter students may hide different views / answers are hard to compare

2.3

students may give the answer that sounds good, e.g. under-report cheating; make the questionnaire anonymous / use indirect questions

2.4

$17 \div 20 \times 100 = \mathbf{85}$ %; high agreement shows good inter-rater reliability: the checklist categories are clear and the coding does not depend on one observer

2.5

any two, outlined with a fix: informed consent: students and parents agree in writing, as students are under 16; protection from harm: the topic may upset them, so give information about counselling and stop if distressed; confidentiality: no names in the report, recordings kept securely; right to withdraw at any time, including their data

3.1

(a) award up to [6]: aim stated; purposive sampling of, e.g., six first-year IB students with a range of subjects, through the IB coordinator; informed consent from students and parents, right to withdraw, confidentiality; an interview guide of open questions, e.g. "Tell me about an evening when homework felt too much", with follow-up questions; about 20 minutes each, recorded and transcribed; thematic analysis to find themes, e.g. time pressure, comparison with friends

(b) award up to [6]: interviews give rich, detailed accounts of experience in students' own words; follow-up questions explore unexpected points; but they are slow, so the sample is small and generalization is limited; questionnaires reach many students quickly and give numbers to compare, e.g. stress ratings; but closed questions miss reasons and feelings; both risk social desirability bias; interviews are less anonymous

(c) use more than one method, e.g. interviews plus diaries or a questionnaire, or two researchers coding the transcripts; if the same themes appear from different sources, they are less likely to come from one researcher's bias; so we can trust more that the findings reflect what students meant

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