

Exercise walk-through

5.1

Introducing PBL: The Driving Question

GAC Study and Communication Skills

Method — Key knowledge: purpose is wider than the measurement

A **driving question** 驱动性问题 gives a project its wider purpose. A **research question** 研究问题 names a narrower comparison and evidence that can answer it. The **scope** 范围 states the people, setting, materials and limits. An observation records an event; an explanation proposes why it happened. Keep these separate. A paper task may inform an instruction design without proving everyday behaviour at real trays. Ask a question that permits more than one result, rather than requiring the preferred design to win.

Method — Source A: proposal and task record

A fictional classroom shares pencils, rulers, cards and clips. After one class, the materials team finds three rulers in the pencil tray. It has not counted earlier returns, asked users or recorded which instructions were visible. This is one observation, not a measured error rate.

The team wants easier return instructions. It proposes two printed layouts and a four-item paper sorting task. Teacher approval is required before involving volunteers. The proposed task uses no grades or names; participation and stopping must be explained. No permission or participant results exist yet.

Method — Source B: draft and current evidence

The first brief says, “Nobody cares about the trays. Our new labels will prove that students become responsible.” The team has no evidence of motives or later behaviour. A revised purpose asks how return instructions could be easier to use. A narrower draft asks whether layout A or B leads to more completely correct sorting sheets among a small volunteer group. The wording, scoring key and assignment procedure still need to be agreed. One teammate suggests testing only readers who already like B; another proposes comparing instructions without revealing a preferred result.

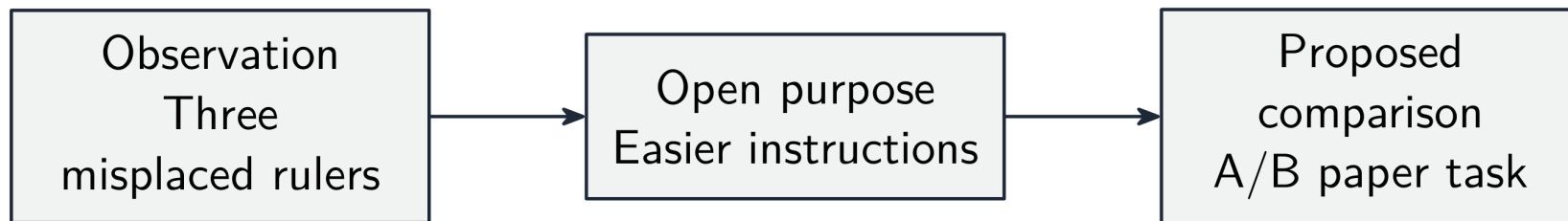
Method — Worked example: do not turn an explanation into a baseline

Known: three rulers were found in the pencil tray after one class. Why record the limit? There is no count of all returned items or earlier classes, so neither an error percentage nor a motive can be established.

A useful brief keeps the observation, names the instruction-design purpose and proposes a bounded A/B paper task. It lists unclear labels or rushed returns as possibilities, not findings. Define the outcome and procedure and obtain approval before recruitment. Even a later paper-task difference would not prove that real returns remain correct all term.

Method — Worked example: do not turn an explanation into a baseline

It lists unclear labels or rushed returns as possibilities, not findings.



Exercises 2.1-2.3

2.1 State the initial observation and ONE important measurement not yet available. [2]

2.2 Identify the wider project purpose and the proposed narrower outcome. [2]

2.3 Give THREE reasons why the first brief overstates the record. [3]

Exercises 2.1-2.3

2.1 State the initial observation and ONE important measurement not yet available. [2]

2.1 Three rulers were in the pencil tray after one class. Accept B1 for a missing total returned-item count, earlier error frequency, visible-instruction record or user account.

2.2 Identify the wider project purpose and the proposed narrower outcome. [2]

2.2 Easier-to-use return instructions; completely correct four-item paper sorting sheets. The task is not a measure of responsibility all term.

2.3 Give THREE reasons why the first brief overstates the record. [3]

2.3 Motives were not observed; no later behaviour/result has been collected; a paper sorting task cannot establish a lasting change in responsibility at real trays. Accept distinct supported limits, not repeated wording.

Exercises 2.4·3.1

2.4 Name an alternative explanation, one procedure detail still to define and one required permission. [3]

3.1 Evaluate THREE proposals: “Recruit only people who like B”; “Call three rulers the whole-class error rate”; “Treat an approved paper task as proof about every future return”. Give a correction and a reason for each. [6]

Exercises 2.4-3.1

2.4 Name an alternative explanation, one procedure detail still to define and one required permission. [3]

2.4 For example, unclear labels or rushed returns as a possibility. Fixed key/outcome rule or fair assignment/instructions. Teacher approval before volunteer work. Do not report the alternative as a finding.

3.1 Evaluate THREE proposals: “Recruit only people who like B”; “Call three rulers the whole-class error rate”; “Treat an approved paper task as proof about every future return”. Give a correction and a reason for each. [6]

3.1 Award 2 per proposal: correction, reason. Invite eligible willing volunteers without selecting on preference: such selection changes the proposed comparison. Record the event and seek a denominator/repeated observations: three items alone are not a rate. Limit conclusions to the actual task and sample: approval and a paper result do not measure every real return.

Exercise 3.2

3.2 Write an 80–110 word project brief. Include the observation, users and purpose, an open narrower question, an alternative explanation, pending procedure/permission and a task-to-real-world limit. Do not announce results. [8]

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3.2 Local analytic rubric, $8 \times B1$: observed rulers/one class; intended users and purpose; open A/B paper question; alternative labelled uncertain; missing measurement retained; pending procedure and teacher permission; paper-task/generalisation limit; coherent truthful 80–110 word response. Example: “After one class we found three rulers in the pencil tray, but we have not measured how often this happens. Our purpose is to make return instructions easier for classmates to use. Unclear labels or a rushed return period could contribute; neither explanation is established. We propose asking whether layout A or B produces more completely correct four-item paper sorting sheets among willing classmates. The wording, fixed key and assignment procedure still need agreement, followed by teacher approval before recruitment. The paper task could inform a design decision, but it would not prove that everyday tray returns stay correct all term.”