

Steal This: The Flawed AI Answer (Make-or-Buy)

A ready-made reperformance and critical-error-review exercise, with a critique rubric. Inspired by Wiseman & Foster (2025), Article 01.

Editorial material. This scenario and the "AI answer" were written by The Editorial Desk to illustrate the approach. They are not taken from Wiseman & Foster's paper. Amounts are in currency units (CU).

The scenario (give to students)

Kettle Co makes 10,000 thermostats a year for its kettles. Per-unit costs of making the thermostat in-house are:

Cost per unit	CU
Direct materials	12
Direct labour (variable)	8
Variable overhead	4
Fixed overhead allocated (CU 6 of this is factory rent and depreciation that will continue whatever is decided; CU 4 is a supervisor's salary that ends if production stops)	10
Total	34

An outside supplier offers to supply the thermostats at CU 30 per unit. The space freed would remain empty. Should Kettle Co make or buy?

The "AI answer" (give to students after they reperform)

*"Making the thermostat costs CU 34 per unit while buying costs CU 30 per unit. Buying saves $CU\ 4 \times 10,000 = CU\ 40,000$ a year. Since the supplier is a professional manufacturer, quality will be the same or better. **Recommendation: buy.**"*

Students' tasks

1. **Reperform:** calculate the relevant cost of making, per unit and in total, before reading the AI answer.
2. **Red-pen review:** label each error in the AI answer: "concept error", "calc error", "unsupported assumption" or "missing qualitative factor".
3. **Sign-off memo:** three lines. Would you sign off on the recommendation? Why or why not?

Lecturer's answer key

- **Relevant cost of making:** $12 + 8 + 4 + 4$ (avoidable supervisor) = CU 28 per unit, against CU 30 to buy. Making is cheaper by $\text{CU } 2 \times 10,000 = \text{CU } 20,000$ a year.
- **Error 1 (concept):** the AI treats the CU 6 unavoidable fixed overhead as relevant. It is not; it is incurred either way.
- **Error 2 (unsupported assumption):** "quality will be the same or better" is not in the facts.
- **Error 3 (missing qualitative factors):** supplier reliability, dependence on one supplier, confidentiality of design, effect on staff, whether the freed space could have another use.
- **Correct recommendation:** make (on the financial figures), subject to the qualitative factors.

Critique rubric (formative)

Criterion	Emerging (1)	Developing (2)	Proficient (3)
Reperformance	Calculation incomplete	Correct total, relevance unclear	Correct relevant cost, each line justified
Error identification	Finds no errors or only "the answer is wrong"	Finds the numerical error	Finds the concept error, the assumption and the missing factors
Explanation of <i>why</i>	No reasoning	Names the rule	Explains why unavoidable costs are irrelevant to the decision
Professional judgement	Accepts or rejects without reasons	Gives a recommendation with partial reasons	Sign-off memo balances figures and qualitative factors