

limio.vn



Scan to open the live platform

Learn your way.

Feedback that knows exactly what you don't.

Skill graph

Bayesian learner model

Misconception tagging

Adaptive path

Event-sourced

Hanoi University of Science and Technology (HUST), Hanoi, Vietnam

3 modules | 1 event log | 0 direct calls

THE PROBLEM

Most LMS grade an answer and move on. Limio updates a skill graph instead — and knows exactly what you don't.

WHAT CHANGES

- ✗ Score only. "You got 6/10."
- ✓ Skill state. "You confuse correlation with causation — start at 4.2."

1 Can BKT turn answers into a number worth trusting?

2 Can a tag turn "wrong" into "why"?

3 Can 3 modules share only events — and feel like one product?

A · ARCHITECTURE

Three modules, one event log

Four layers. Zero direct calls.

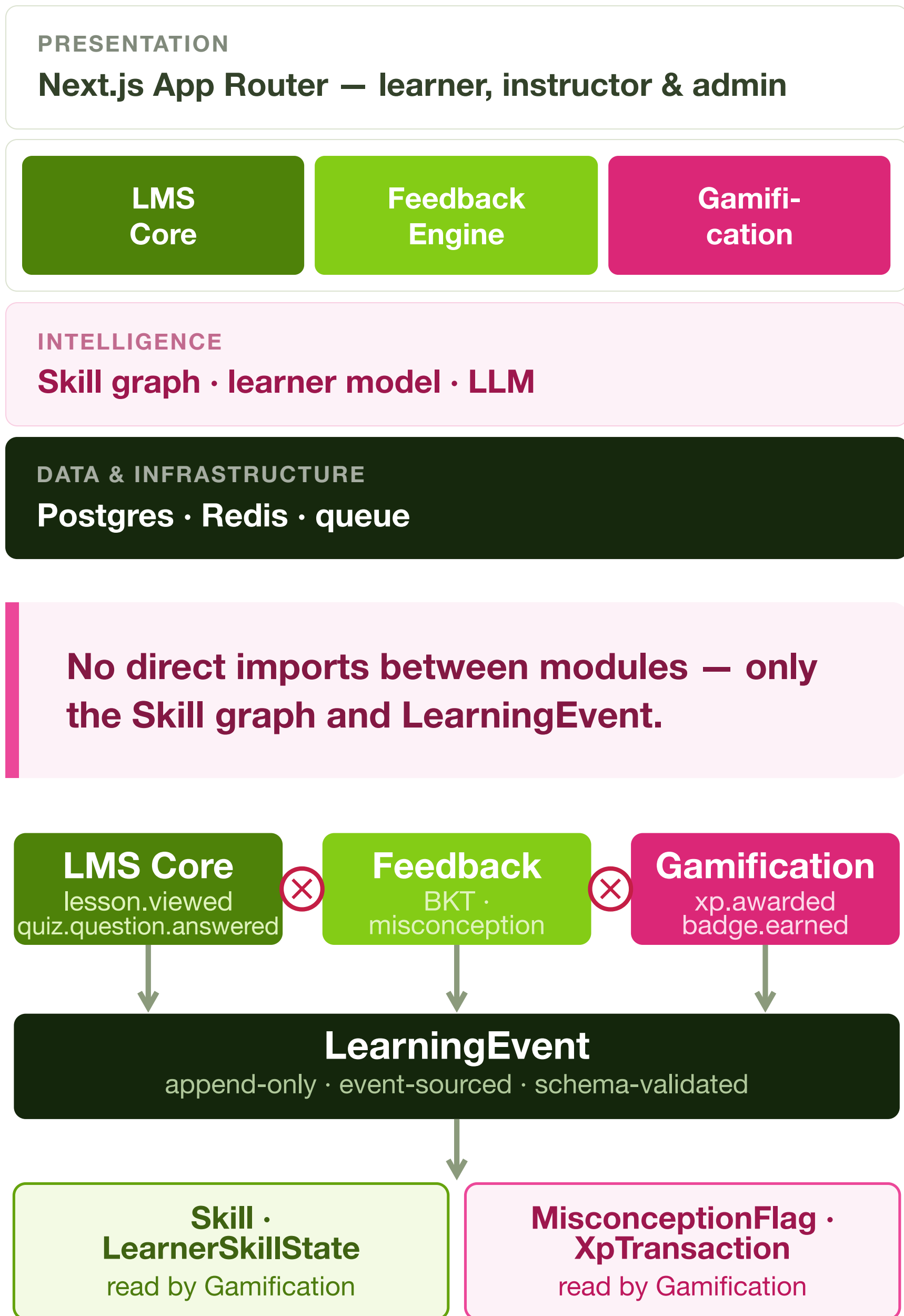


Fig. 1 — the event bridge. Modules never call each other: they write here, and read each other's events.

BOUNDARY RULE, BY EXAMPLE

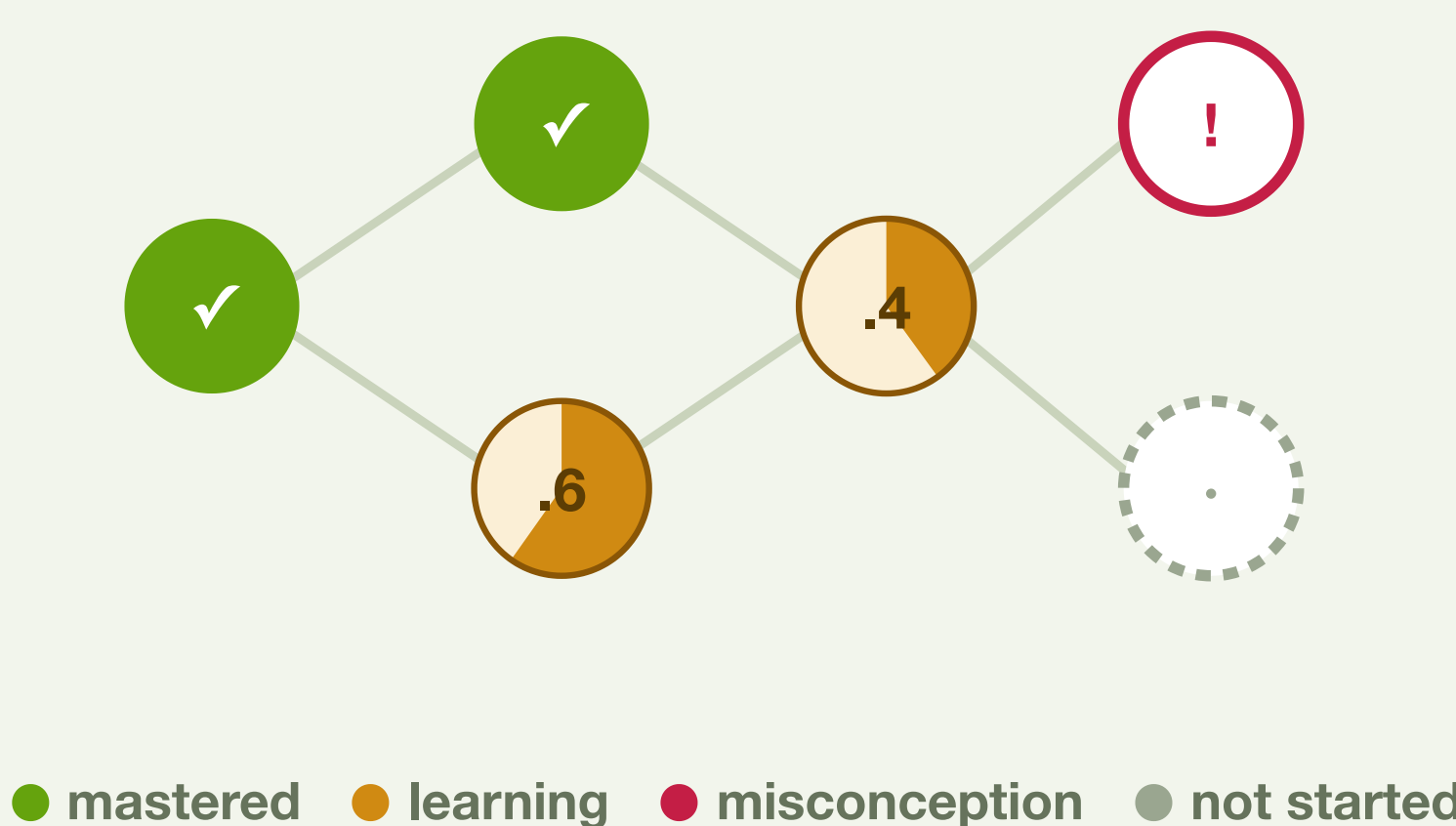
- ✗ core-feedback imports core-gamification
- ✓ core-feedback reads LearnerSkillState and subscribes to LearningEvent

B · LEARNER MODEL

One number per skill

Bayesian Knowledge Tracing.

FIG. 2 — SKILL GRAPH (EXCERPT)



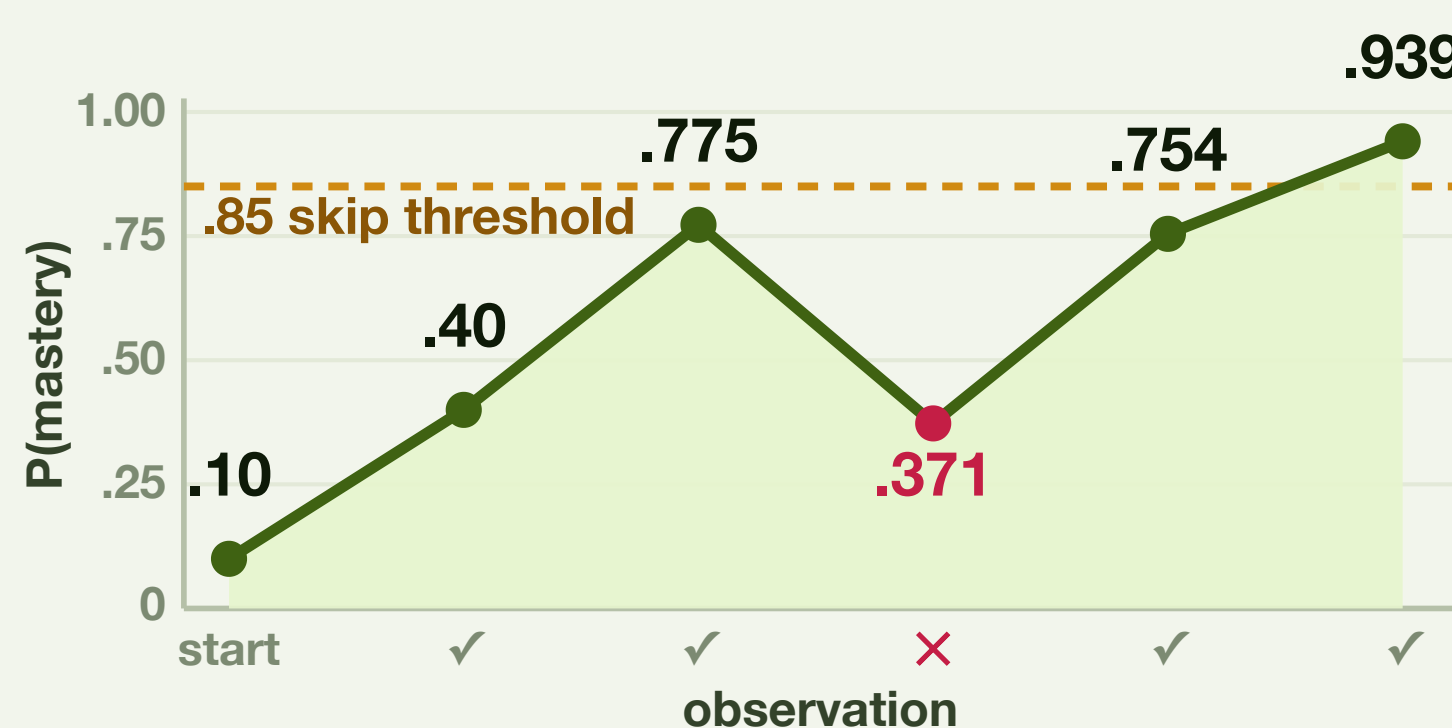
$$P(L_t | \text{correct}) = \frac{P(L)(1-P_S)}{P(L)(1-P_S) + (1-P(L))P_G}$$

$$P(L_{t+1}) = \text{posterior} + (1-\text{posterior}) \cdot P_T$$



Bayesian Knowledge Tracing — Corbett & Anderson (1994)

FIG. 3 — WORKED EXAMPLE · P_T .10 · P_S .10 · P_G .20



A slip drops mastery — it doesn't reset it.

C · FEEDBACK LOOP

From answer to feedback

Five steps, one request.

- 1 Answer submitted
event written
- 2 Mastery updated
BKT recomputes P(L)
- 3 Misconception checked
flag raised or re-armed
- 4 Skip or remediate
≥.85 skip · 2 fails → remedial
- 5 Diagnostic delivered
copy + top-3 lessons

Fig. 4 — all five steps run inside the submit request.

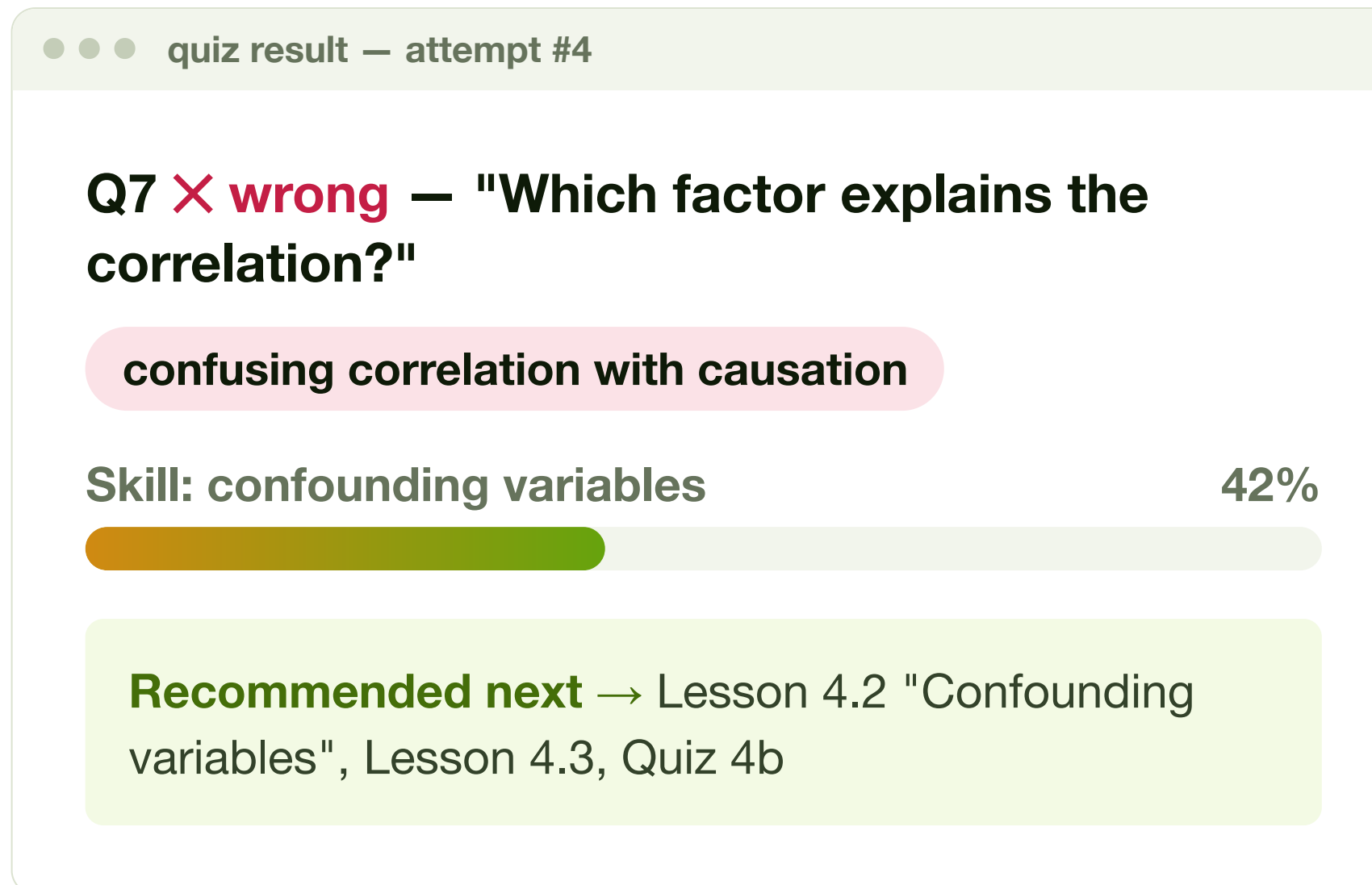
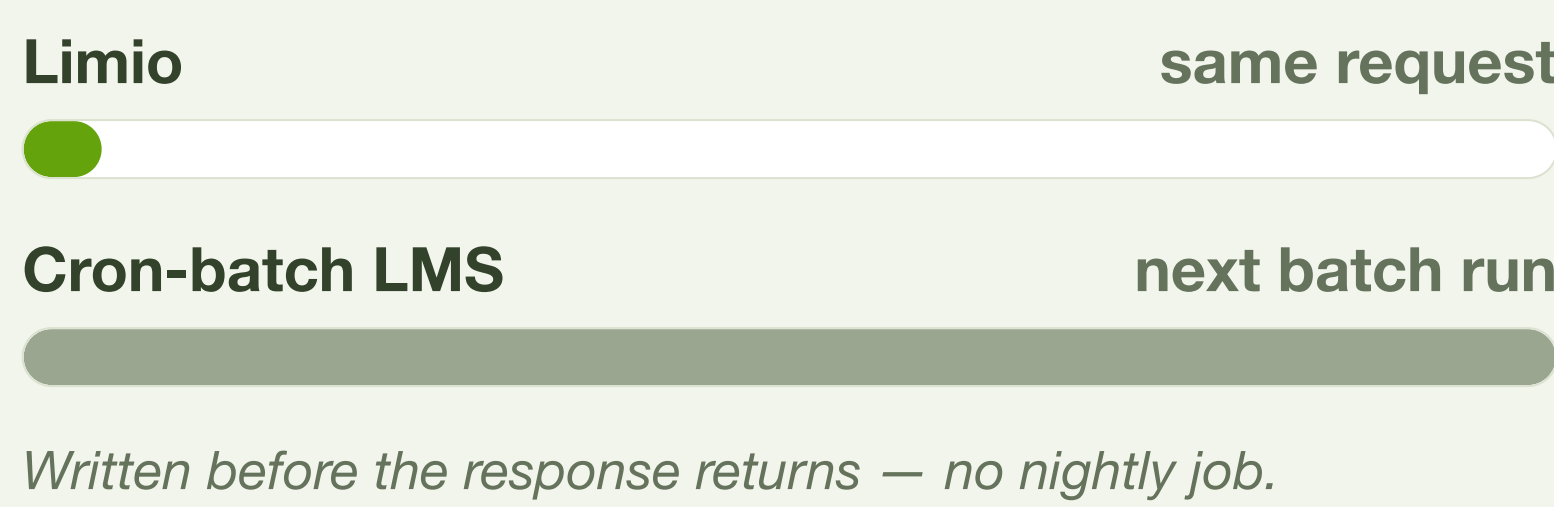


FIG. 5 — NO BATCH DELAY



CONCLUSIONS

- ✓ Skill graph before LLM.
- ✓ Events, not imports.
- ✓ BKT: one number per skill.
- ✓ Next: real pilot data.

.85

≥ 0.85 on every tagged skill → skip.
Below that, Limio keeps teaching.