

From Student Voice to Student Capability

Co-creating GenAI Tools for Learning and Teaching

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From Student Voice to Student-Built Intervention



Student Voice is often captured as commentary:

- Surveys, committees, feedback forms, consultations

TeachAthon tested Student Voice as action:

- students identify educational frictions, design interventions, build prototypes
- the University learns from concrete artefacts, not only opinions

Key line: Student Voice should not only be heard; it can be built, tested, and learned from.

What Was the TeachAThon?



A structured student prototyping event around GenAI in Higher Education Domain-aside; the broader model was student-led educational improvement

Challenge to students:

- identify a real problem in learning, teaching, feedback, access, or support
- design or build a response
- present the prototype and the reasoning behind it

What Was the TeachAThon?



Structure:

- Registrations open – Advertise early & Give time to coordinate teams
- Opening Event (29 Sep 25'); speakers – inspiration and challenge setup
- Take-home challenge (Oct 20 deadline) – support office hours and contact
- Closing & Awards (27 Oct 25') – presentations, judges and audience vote

Organised by [SPEL](#) with [CSEG](#), [CompSoc](#)

Supported by Principal's Teaching Award Scheme ([PTAS](#)) >> £1500 prizes, £900 catering

What Came Out of It?



7 final student projects:

- marking & feedback, tutoring access, lecture engagement, revision support, accessibility, and course-grounded AI support

Follow-on impact:

- brought industry, educators, and students in a shared space
- informed ongoing conversation in GenAI in Learning & Teaching
- generated start-up conversations
- informed and inspired the next-semester [AccessAlthon](#) (same structure, focussing on Accessibility in Education)

What Came Out of It?



Today:

3 project presentations → GitHub/contributors → Wooclap/table discussion

Listening questions:

- What problem did students prioritise?
- What does the prototype reveal about student experience?
- Where could student-built intervention improve your own context?



GradelQ

Marking & Feedback assistant

Matvii Yatsenko &
Viktor Sharha



GradeIQ — The Problem



- The problem of marking.
- Tutors and other markers waste their mental resource on repetitive marking work.
- Those efforts could be allocated elsewhere.

GradeIQ — How we Identified it



- I encountered the problem in my first year of studies after receiving feedback for my coursework and exams.
- Feedback for each assignment took significant time to arrive, ranging from a week to months. Sometimes the feedback was insufficient too.
- After surveying other students, the same problem pattern was noticed by them.

GradeIQ — Constraints & Requirements



- 2 weeks to build proof of concept once the TeachAThon was announced.
- No custom-built AI model could be made at that time with no cost.
- Ethics and educational constraints to reduce bias and mark fairly.

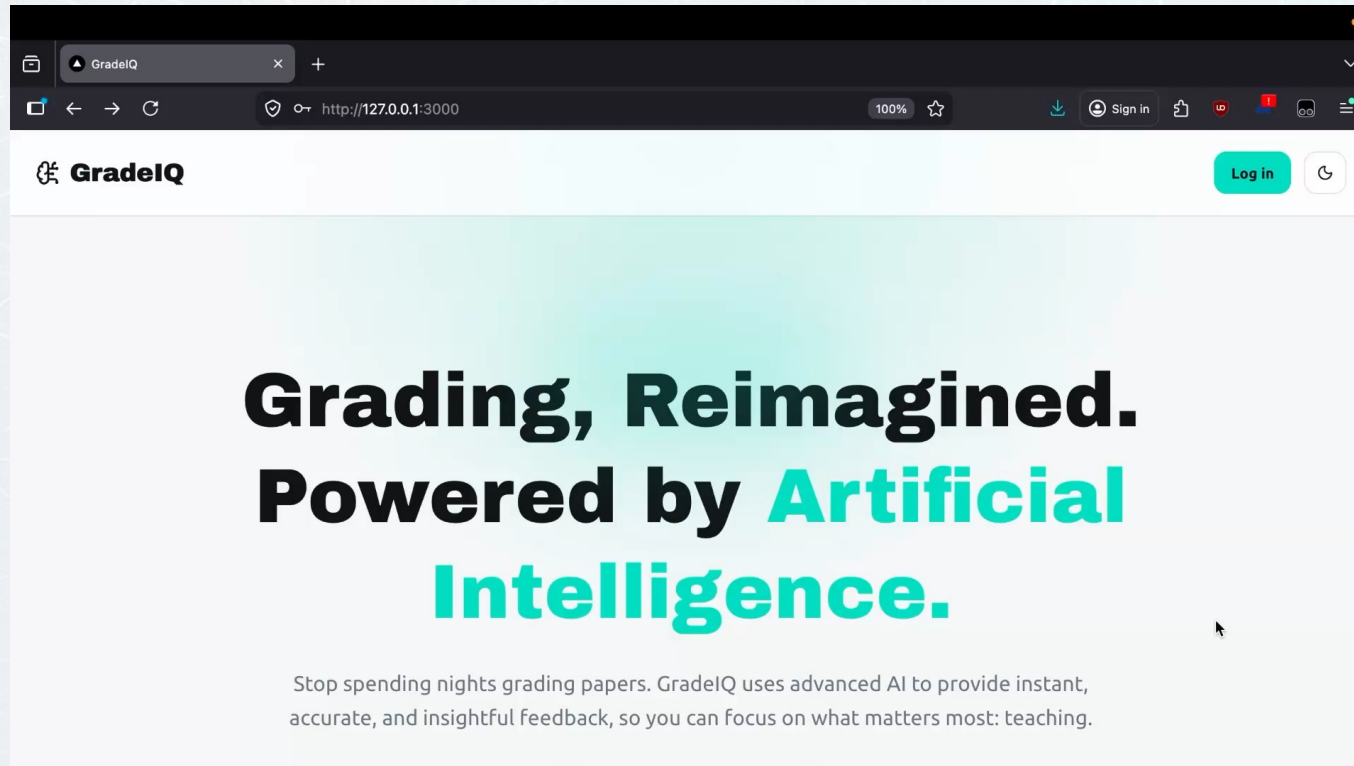
GradeIQ — Solution Direction



What did we build?

1. Marker uploads a markscheme into GradeIQ.
2. The custom marking rubrics is generated by AI.
3. Marker then uploads student work to grade into GradeIQ.
4. GradeIQ grades them carefully, clearly adhering to the rubrics and providing evidence for each mark awarded/non-awarded.
5. Markers review the AI-generated grades for each submissions carefully and either accept them or make changes.

GradeIQ — Demonstration



GradeIQ — Lessons Learnt & Future Work



Lessons Learnt

- Marking is a non-deterministic process
- Reducing AI bias and hallucinations
- AI marking accuracy is impressive otherwise

Future Directions

- Integrating open-source models to do the marking on our own servers to both reduce cost to minimum and keep user privacy high.
- Adding different marking modes.



AI Tutor Platform

StudyAI

Bridging the Learning Divide

Caroline Rennier & Orkun Kinay

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StudyAI — The Problem



- High-dosage tutoring adds 3–15 months of learning per year (Pearce & Shoemaker DeMio, 2024), but only 2% of US students get it because it costs £40–100/hour (Rapaport & Silver, 2023).
- So financial privilege, not academic potential, determines outcomes.
- Current AI tutors don't fix this. Answers disconnected from your course create "hallucinated understanding": confidence without mastery.

Pearce, A., & Shoemaker DeMio, P. (2024, January 18). Fact sheet: Scaling up high-dosage tutoring is crucial to students' success. Center for American Progress.

Rapaport, A., & Silver, D. (2023, March 10). Two percent of U.S. children receive high quality tutoring, despite billions... USC Schaeffer Center for Health Policy & Economics.

StudyAI — How we Identified it



- Used ChatGPT Study Mode myself, which was good at teaching, but it defaulted to general knowledge over my actual course materials.
- Doesn't follow my course's flow: no model of how my syllabus builds concept on concept.
- It can confidently state things that are wrong

StudyAI — Constraints & Requirements



- **Academic integrity:** must build understanding, not just hand over answers to graded work.
- **Grounding:** answers must come from the student's actual course materials, not general knowledge.
- **Trust:** flag when it might be wrong – not stating errors confidently.
- **Data:** student materials and learning data shouldn't leave institutional control.

NATURAL LANGUAGE PROCESSING Tutorial Assignment Write a program to generate unigrams, bigrams and trigrams of a given sentence using NLTK library

10:13

Great topic! Let's design this together so you truly understand what's happening under the hood.

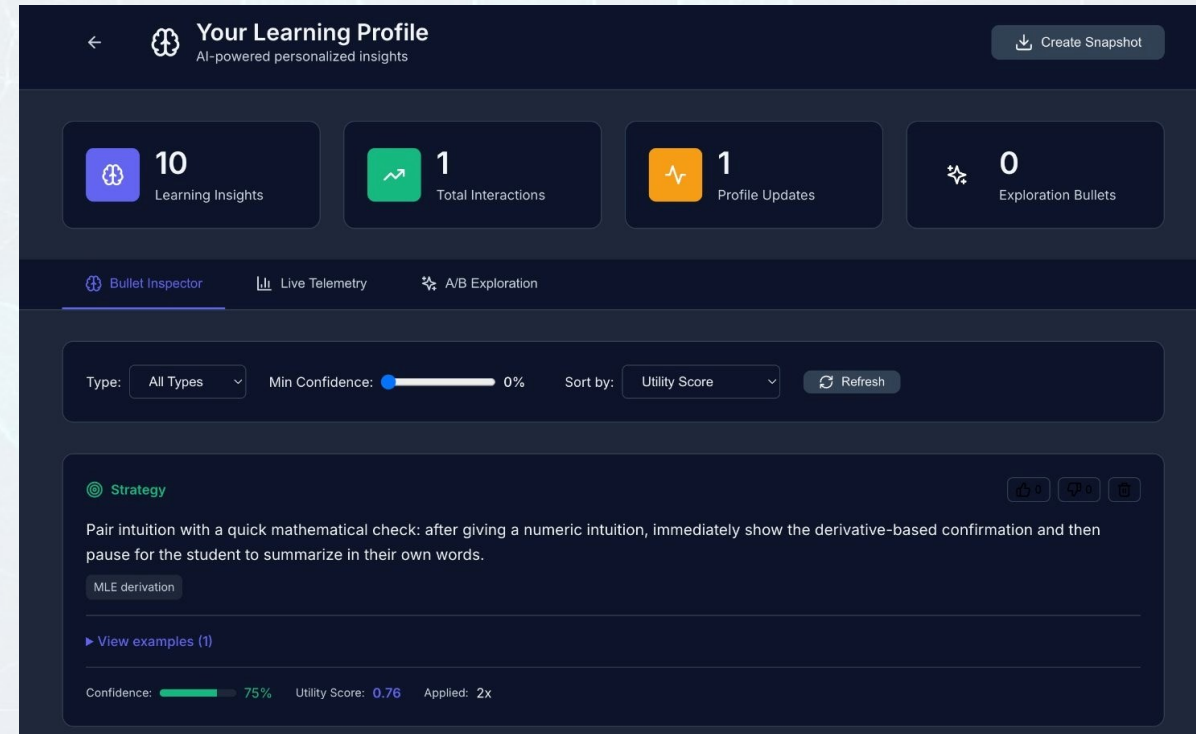
Anchor card (grounding intuition)

- Anchor: For a sentence that, after tokenization, has L tokens:
 - Unigrams (1-grams): L items
 - Bigrams (2-grams): $L - 1$ items
 - Trigrams (3-grams): $L - 2$ items
- Metaphor: Imagine you're a detective tracing clues along a sentence. Each word is a clue (unigram). Pairs of neighboring clues form a bigger clue (bigram). Triples form an even bigger narrative (trigram). The total number of each clue type depends on how many tokens you have.
- Quick check/prediction: If you tokenize a sentence into 6 tokens, how many bigrams

StudyAI — Solution Direction

- Apply Agentic Context Engineering to education (Zhang et al., 2025): upload your course materials once, the system builds an evolving knowledge base.
- Diagnoses your baseline → Socratic dialogue grounded in your own materials.
- Builds "study playbook" of your misconceptions, following course's flow.
- Helps build concepts, won't hand over answers.

Reference: Zhang, Q. et al. (2025). [arXiv](#).



StudyAI — Demonstration



AI Tutor Platform

Login Get Started

Personalized AI Tutoring with Pedagogical Excellence

Experience adaptive learning powered by cutting-edge AI, designed with proven teaching methodologies to guide you toward deep understanding and critical thinking.

Start Learning Free Learn More

Key Features

Built on research-backed pedagogical principles and state-of-the-art AI technology



StudyAI — Lessons Learnt & Future Work



Lessons Learnt

- Models compress aggressively: preserving teaching detail took deliberate design
- Balancing real help and engagement against not just handing over answers.

Future Directions

- Move from commercial APIs to open-source models (Llama 4 / Qwen 3) via LiteLLM
- Validating real learning outcomes across a variety of students and courses
- Deploy to UoE students through ELM, the University's existing Llama-hosting AI platform

LeQtture

On-demand Lecture Q&A

Shlok Gupta

LeQtture

LeQtture — The Problem



Poor Engagement

Option 1: Piazza
Lengthy Waiting time + Friction
Trivial Questions unnecessarily
increase staff workload

Option 2: ChatGPT
Lack of Context + Friction

Passive Learning

Leads to
No Active Recall

Lack of Organised Study Material

Learning materials stay scattered →
Students waste time searching
instead of revising

Disorganised Revision

→ Students struggle to consolidate
knowledge and prepare efficiently for
exams.

LeQtore — How I Identified it



- Personal Experience
- Surveys
 - Weekly Class Rep. Surveys
 - No motivation to catch up on recorded lectures
 - Difficult to stay organised
- Research
 - Forgetting Curve (~ 56% in just 1 hour!)
 - ... + other literature

LeQtire — Constraints & Requirements



- 1. Learning science:** Students engage poorly with passive lecture recordings. The solution had to promote **active recall** and interaction.
- 2. Lecture-specific context:** Generic AI tools often lack course context. The solution had to be grounded in the **actual lecture content**.
- 3. Ethics & accessibility:** Usable by diverse student population (~50,000 students), support for accessibility features.
- 4. AI reliability:** In an educational setting, incorrect information is high-risk. The solution required **hallucination safeguards** and verifiable outputs.
- 5. Visual content limitation:** LLMs output in plain-text, hence cannot extract and embed original lecture images in their responses.

LeQtore — Solution Direction



What is it?

- An extension that mounts onto Echo360, allowing you to ask questions directly on the page.
- LeQtore sees and hears the lecture, and uses lecture slides for proper context + cites timestamp in its answers → combats hallucinations!
- Generate Quizzes, Checklist, Flashcards, Summaries - all with a unique twist!
- 6+ in-built accessibility features for ~50,000 students

Intervention: Better engagement while watching lectures, greater accuracy when asking AI questions, and more organised revision.

LeQtore — Demonstration



Quiz Hints

- ★ Personalised Hint → Directs to Lecture Material
 - Goal isn't just to get this question right
 - It's to learn and fill knowledge gaps

Refer to the informal definitions of asymptotic bounds discussed early in the lecture. Lecture slide 4 and the discussion around timestamp 15:17 cover these definitions.

LeQtore — Lessons Learnt & Future Work



What was difficult:

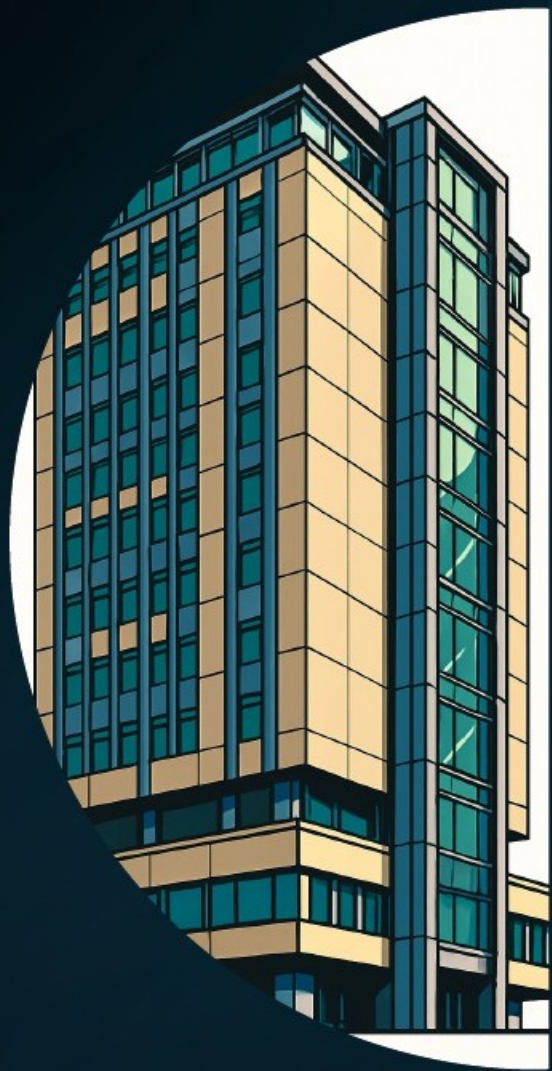
- Building a fully-functional demo in 2-3 weeks

The future:

- PTAS follow-up
- Website

and...

- **Walkthrough**



TeachAThon 2025 Contributions



- **Submissions:** <https://github.com/Synthetic-Processes-Embodiment-Labs/TeachAthon-2025>
- **Contributors:**
 - FormativED – Gregorius Jason
 - GradelQ – Matvii Yatsenko, Viktor Sharha [3rd place]
 - LeQture – Shlok Gupta [1st place]
 - MindfuLLM – Jason Latz, Benedek Labancz, Ivan Sowerby, Dhyey Mehta, Alp Niksarli, Ömer Tuğrul, Barış Tekdemir [5th place]
 - StudentVerse – Poorna Siri Karanam [2nd place]
 - StudyAI – Caroline Rennier, Orkun Kinay [4th place]
 - Symbol Sense – Resa Kemal Saharso, Gregorius Dimas Baskara, Rahmah Khoirussyifa Nurdini, Nabillah Octarani



Wooclap – Interactive Session

<https://app.wooclap.com/IBOAERZ>

