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CASE STUDY · MARLUC SYNOPSIS

Tsinghua University AI teaching assistants

IMPLEMENTED 2023–2025 · EDUCATION · CHINA · BAND D · CLAIMED ONLY

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Tsinghua University gave students AI teaching assistants in about 117 courses from September 2023 and ran a pilot of AI-taught courses. The university reports a 10% grade rise on one assignment and high satisfaction. The sources opened give no independent evaluation or published method for these results.

ABOUT THIS SYNOPSIS

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NOTICE WORDING LAST UPDATED 16 NOVEMBER 2026

AT A GLANCE

AI used: Generative AI teaching assistants answering from course knowledge bases, plus MAIC, a pilot of AI teacher, assistant and classmate agents.

Implemented: 2023–2025. Grade: band D, Task support, Claimed only.

Headline result, as reported: Tsinghua introduced AI teaching assistants in about 117 courses from September 2023; the university reports a 10% grade rise on one assignment, and a student-volunteer pilot of AI-taught courses

1 · The case

The facts, as reported by the 5 sources listed at the end. Where a source is silent, the field says "Not reported".

Organisation

Tsinghua University. A leading Chinese research university. The assistants and MAIC were built by its computer science and education teams. Canvas block: 5. People and skills. Also 4. Operations and process.

Business challenge

The challenge. Per Tsinghua, large classes and limited office hours make detailed feedback hard to give, and some students are too shy to ask questions in lectures. Its stated aims also include reaching students who cannot attend in person.

Who implemented it

In-house (In-house): Built and ran the assistants and the MAIC pilot..
Tsinghua describes GLM as a model fully developed by Tsinghua; no outside vendor is named in the sources opened.

Technology (SEAM pillar E)

SEAM types: T4 RAG / vector search over your own data, T7 AI agents. Deployment: Not reported. Vendors and products: Tsinghua AI teaching assistants, MAIC (Massive AI-empowered Course), GLM.

Where it was built in: A platform reached through an app and an online portal. Answers are drawn from course-specific knowledge bases compiled by lecturers. The MAIC pilot adds AI teacher, teaching assistant and classmate agents, which Tsinghua says are powered by its own GLM model.

What changed

Before: students relied on lecturers, human teaching assistants and limited office hours. After: students in participating courses also have 24-hour AI help, and instructors say they can spend more time on deeper material. Whether grades or the staffing of courses changed across the university is Not reported. [1] [2] [3] [4] [5]

What it cost

Not reported

What it saved

Not reported. Instructors say the assistants free time for preparation (Tsinghua feature); no time saved is quantified. [1] [2] [3] [4] [5]

Governance and control

Tsinghua says the model was refined for over a year, answers cite sources and subject experts monitored MAIC output. The MAIC experiment had ethics committee approval, and a November 2025 guideline sets rules for AI use by graduate students and instructors.

S2 · Accountable owner · Claimed
Tsinghua names Wang Hongning as lead of the assistant's technical development and Wang Shuaiguo, director of the Online Education Center, as primary drafter of the 2025 guideline. [1] [5]

A1 · Safe use · Evidenced
The MAIC experiment was approved by the Tsinghua University Science and Technology Ethics Committee (certificate THU-04-2024-56); the 2025 guideline prohibits AI ghostwriting, plagiarism and fabrication by graduate students. [3] [5]

A2 · Human in the loop · Claimed
Tsinghua says instructors decide how AI is used and oversee AI-generated teaching materials, and that MAIC output was regularly monitored by subject experts. [2] [5]

A3 · Monitoring and assurance · Claimed
Tsinghua says the team spent more than a year refining the model, bugs and bias concerns, and that students and teachers could flag errors in MAIC output. [1] [2]

A4 · Vendor AI · Not reported
Not reported.

A5 · Agent controls · Not reported
MAIC uses AI teacher, assistant and classmate agents; controls beyond expert monitoring are not reported. [2]

A6 · Standards and regulation · Not reported
Not reported.

What worked, what did not, what is unproven

WORKED

– Tsinghua reports that students who received AI feedback improved grades by 10% on a specific assignment in one course (initial testing).

– In one thermodynamics course, 68 students used the assistant for more than eight hours each on average, per China Daily quoting the instructor.

– In the MAIC pilot, Tsinghua reports 84.1% of students expressed enjoyment and that the AI-taught group slightly outperformed a human-taught control group in course tests.

DID NOT

– In the MAIC preprint, students rated the AI instructor lowest on feedback that helped them understand strengths and weaknesses (mean 3.51 out of 5), which the authors say may reflect the same scripts being used for all students.

– The MAIC preprint reports that students mostly preferred a continuous mode with no interaction, which the authors say may limit active engagement.

– The instructor quoted by China Daily says assignments fully generated by AI often lack depth.

UNPROVEN

– Whether the 10% grade rise holds beyond one assignment: no method, sample or control is given in the source.

– The control-group result for MAIC: the university feature reports it, but the preprint opened does not report that comparison.

– Long-term learning effects and cost: Not reported.

Timeline

Sept 2023 AI teaching assistants introduced for the first time, in about 117 courses across 40 departments [1]

Sept 2024 Preprint published on the MAIC pilot (two courses, more than three months, ethics committee approval) [3]

Sept 2024 Chemical Engineering Thermodynamics course adopts the university's AI teaching assistant; 68 students use it [4]

Nov 2025 Tsinghua issues a framework for AI use in education that supports AI in over 390 courses and bans AI ghostwriting and plagiarism by graduate students [5]

2 · Grade and SEAM assessment

MarLuc's opinion, made on the evidence above. How cases are graded: marluc.co.uk/case-studies/how-we-rate

Level of change and impact

Claimed: Not applicable. Grade: D, Task support. Proof: Claimed only. Level of change: Task support.

Task support (Level 1, band D). Students and instructors use AI help in many courses, but no process, staffing or cost change is reported and the results are the university's own.

The SEAM view and lessons learnt

This is a university using its own research capability to run an in-house learning assistant at scale, with a guideline added later. The usage and satisfaction figures are encouraging, yet the performance claims have no published method. For a larger organisation, the transferable point is that the first year is a learning exercise: record who used the tool, set a comparison group before launch, and publish the method with the result.

1. Cite sources in every answer from an AI assistant.
2. Set a comparison group and a method before reporting a grade effect.
3. Write the AI-use rules for staff and students as the tool is introduced.

Evidence

Score 1 of 4. Own account: Tsinghua news pages and a preprint by the university's own researchers, with state-media relay. No independent evaluation.

Evaluation method. University announcements, a preprint with ethics approval (MAIC) and a state-media interview with one instructor. No peer-reviewed evaluation of the assistants was found.

Sources disagree. Tsinghua's MAIC feature says the study analysed 100,000 learning records from more than 700 students; the preprint says more than 100,000 records from more than 500 students. The feature reports a control-group comparison and an 84.1% enjoyment figure that were not found in the preprint opened. Tsinghua counts about 117 courses at the 2023 launch and a 2025 guideline supports AI in over 390 courses; these are different measures at different dates.

Status. Ongoing. Tsinghua issued an AI-in-education framework in November 2025; later evaluation results are Not reported.

3 · Original sources

Read these in full. To challenge a fact or a grade, use the contact form at marluc.co.uk or the link on https://marluc.co.uk/case-studies/tsinghua-ai-teaching-assistants

[1] Tsinghua University: The five best things about Tsinghua's new AI teaching assistant
https://www.tsinghua.edu.cn/en/info/1245/14513.htm

[2] Tsinghua University: AI-Powered Learning: MAIC Offers a New Approach to Online Education
https://www.tsinghua.edu.cn/en/info/1245/14044.htm

[3] arXiv (preprint): From MOOC to MAIC: Reshaping Online Teaching and Learning through LLM-driven Agents
https://arxiv.org/abs/2409.03512

[4] China Daily (state media): Professors, students cautiously welcome AI
https://subsites.chinadaily.com.cn/education/2025-03/13/c_1078514.htm

[5] China Daily (state media): Tsinghua introduces comprehensive framework for AI use in education
https://www.chinadaily.com.cn/a/202511/26/WS6926b6cba310d6866eb2b876.html

Tsinghua University website: https://www.tsinghua.edu.cn/en/

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