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ADVANCED FOREIGN EXPERIENCE IN ACHIEVING SUSTAINABILITY THROUGH THE INTELLECTUALISATION OF HIGHER EDUCATION

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Abstract

The paper analyses advanced foreign practice in using artificial intelligence (AI) to intellectualise higher education and to strengthen its sustainability. Four levels of intellectualisation are distinguished: national AI strategies, mass AI literacy, AI-powered student services and institution-wide AI platforms. The cases of Singapore, the United Arab Emirates, Finland and the United States are examined, including the results of a randomised controlled trial of an AI chatbot at Georgia State University and the reach of the Elements of AI course. Lessons for adapting this experience to Uzbekistan's higher education system are formulated.

Keywords: intellectualisation of higher education, sustainability, artificial intelligence, foreign experience, AI chatbot, AI literacy, student retention, national AI strategy, best practice.

INTRODUCTION

The sustainability of a university today depends not only on its finances but also on its ability to retain students, use resources efficiently and keep pace with



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technological change. **Intellectualisation** — the systematic embedding of AI and data-driven tools into teaching, student services and management — has become one of the main instruments for achieving this. Leading countries are pursuing it at several levels at once: from national strategies to specific services that solve concrete institutional problems.

For countries that are only beginning to introduce AI into higher education, studying this experience makes it possible to avoid costly mistakes and to choose solutions with proven results. Of particular value are cases supported by rigorous evidence, such as randomised experiments, and initiatives that have reached millions of users.

The aim of the study is to systematise advanced foreign experience in intellectualising higher education and to identify its effects on institutional sustainability, as well as lessons for Uzbekistan.

MAIN PART

An analysis of foreign practice allows four levels of intellectualisation to be distinguished, each of which contributes to sustainability in its own way (Figure 1). At the national level, the state sets goals and builds talent pipelines; at the level of society, mass AI literacy is formed; at the institutional level, AI is used in student services and across the whole university.



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Levels of intellectualisation in advanced foreign practice

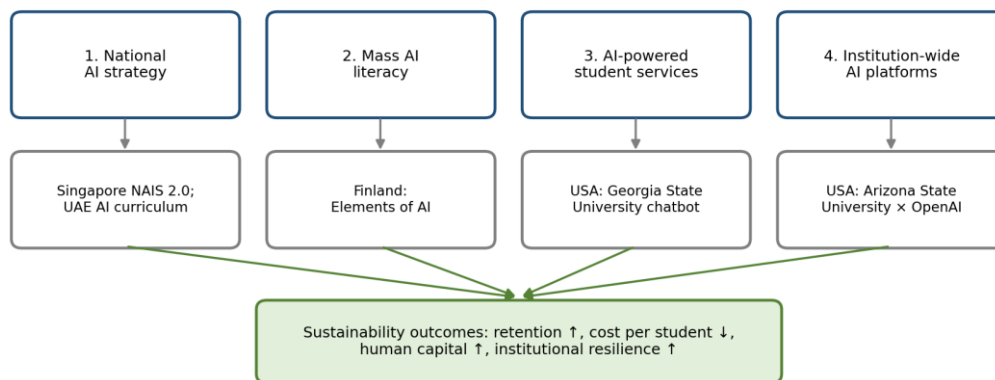


Figure 1. Levels of intellectualisation of higher education in advanced foreign practice

Source: developed by the author.

The main features of the cases considered are summarised in Table 1. Singapore's second National AI Strategy (NAIS 2.0, December 2023) aims to triple the number of AI practitioners to 15,000 [1]. The United Arab Emirates founded the Mohamed bin Zayed University of Artificial Intelligence (MBZUAI) in 2019 as a graduate research university dedicated entirely to AI. In January 2024, Arizona State University became the first university to partner with OpenAI, gaining institution-wide access to ChatGPT Enterprise for teaching, research and administration [2].



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Table 1 Comparison of foreign cases of higher education intellectualisation

Country	Initiative	Content	Contribution to sustainability
Singapore	National AI Strategy 2.0 (2023)	Target of 15,000 AI practitioners; university–industry talent programmes	Long-term demand for graduates; stable human-capital base
UAE	MBZUAI (2019)	Graduate university focused entirely on AI research	Attraction of international talent and research funding
Finland	Elements of AI (2018)	Free online AI course from the University of Helsinki and MinnaLearn	Mass AI literacy; university’s public mission and reputation
USA	Georgia State University: Pounce chatbot	AI text assistant supporting admitted students through enrolment	Lower summer melt; tuition revenue retained at low staff cost
USA	Arizona State University × OpenAI (2024)	ChatGPT Enterprise for teaching, research and administration	Scalable support for students and staff; process efficiency

Source: compiled by the author based on [1–5].

The strongest quantitative evidence comes from the Georgia State University experiment (Figure 2). In a randomised controlled trial in summer 2016, admitted students who received support from the AI chatbot Pounce were 3.3 percentage points more likely to enrol on time, which corresponds to a 21% reduction in summer melt; for a cohort of about 3,500 students this means roughly 116 additional enrollees [3]. At the same time, only 13.5% of student messages



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required a human response, while treated students received an average of 43 messages and about 85% replied at least once [3]. Thus the chatbot delivered the effect of labour-intensive counselling at a fraction of its cost, directly supporting the university's financial and social sustainability.

AI chatbot experiment at Georgia State University (RCT, 2016)

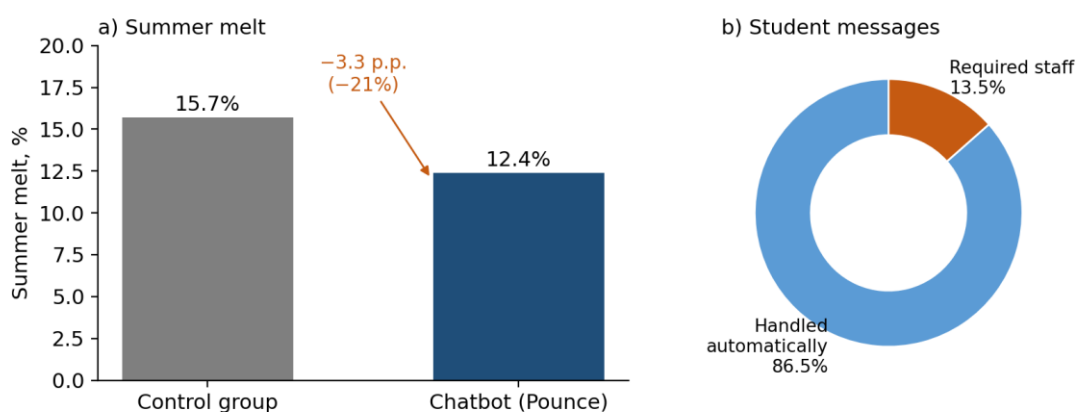


Figure 2. Results of the AI chatbot experiment at Georgia State University

Source: compiled by the author based on Page and Gehlbach (2017) [3]; control and treatment melt rates are derived from the reported 3.3 p.p. and 21% effect.

Finland's Elements of AI course illustrates the societal level of intellectualisation (Figure 3). Launched in 2018 by the University of Helsinki and MinnaLearn, it has introduced more than one million people from 170 countries to the basics of AI; it is available in 26 languages, 40% of participants are women and more than a quarter are aged 45 or over [4]. In Finland itself, the initiative was taken up by about 1% of the population, and 250 Finnish companies have used it to train employees [4; 5]. For the university, this has created reputational capital and new partnerships at minimal marginal cost.



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Elements of AI (University of Helsinki & MinnaLearn, launched 2018): reach and audience



Scale (blue) and inclusiveness (orange) indicators

Figure 3. Reach and audience of the Elements of AI course

Source: compiled by the author based on University of Helsinki data [4].

Based on the cases examined, the main lessons for Uzbekistan and possible ways of adapting them are summarised in Table 2.

Table 2 Lessons from foreign experience and their adaptation for Uzbekistan

Lesson	Foreign evidence	Possible adaptation in Uzbekistan
Start with services that protect revenue	GSU chatbot: –21% summer melt	AI assistants in Uzbek for admissions, contract payments and enrolment
Combine national goals with university programmes	Singapore NAIS 2.0 talent targets	Linking university AI programmes to national AI workforce targets
Make AI literacy open and free	Elements of AI: 1M+ learners	Open Uzbek-language AI course led by a consortium of universities
Negotiate institution-wide licences	ASU × OpenAI partnership	Consortium licences for AI tools to reduce costs for individual HEIs
Measure effects rigorously	Randomised trial at GSU	Pilot projects with control groups before scaling

Source: developed by the author.



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CONCLUSION AND RECOMMENDATIONS

Advanced foreign experience shows that intellectualisation strengthens the sustainability of higher education when it is pursued at several levels simultaneously and when its effects are measured. The most convincing results are achieved by targeted AI services that solve a specific institutional problem, such as student retention, at low cost. On this basis, the following recommendations are made:

1. Pilot AI student services. Launch an Uzbek-language AI assistant for applicants and first-year students in several universities, assessing its effect on enrolment and retention with a control group.
2. National AI literacy course. Create a free online AI course on the model of Elements of AI through a consortium of leading universities.
3. Consortium licensing. Negotiate joint licences for AI platforms on behalf of groups of universities to reduce per-student costs.
4. Talent targets. Link university admission plans in AI-related fields to national AI workforce targets.
5. Evidence-based scaling. Scale AI solutions across the system only after independent evaluation of pilot results.

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