

AI Garage Overview

A short commentary on submitted generative AI case-studies

—

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1. Introduction

1.1 Overview of Report

The current era sees many higher education institutions (HEIs) willingly or otherwise exploring how generative artificial intelligence (GAI) may reshape higher education or change many standard practices in various areas. Many HEIs rushed into existence new policies around usage to deal with possible threats to academic integrity and unacceptable student usage.

This is a highly contested space, with viewpoints ranging from GAI being transformational at a fundamental level to concerns that it is flawed and overhyped as a technology and represents an environmentally dangerous fad and a range between these two positions. Regardless of the future state of GAI, the present is filled with a high level of experimentation across the range of activities that HEIs undertake.

This short report is a high-level analysis of various AI-centric projects undertaken within HEIs. The data for this analysis was collected as part of a member benefit project entitled “AI Garage”, where the ‘garage’ can either be taken as a metaphor for the creativity of a garage band or as an allusion to how many technology innovations claim to be created in a garage. In either scenario, the project asked members, “What are you doing at present with GAI?” without limits on what was submitted or any requirement that work was concluded.

1.2 The submissions

The 45 projects highlighted and the analysis do not claim to be representative but provide a glimpse into the diversity of applications and the garage band spirit we see in educational settings via experimentation. The submission process for the project was done via a simple and short Microsoft form. Except for some light copyediting, the entries (see Appendix 2) are presented “as is,” and inclusion here should not be seen as an endorsement by Advance HE of approaches, outputs, or any aspect of the project – they are. The overall member benefit theme was intended to look at the use of AI in areas that were not assessment-related. Still, some are included here simply because we felt that members would benefit from their inclusion and being over prescriptive does not serve our mission to enhance higher education.

All respondents had the option to provide an email address publicly so that there was an opportunity for collaboration and progress sharing beyond the life of this snapshot. Please let us know if reading this report leads to a new collaboration or project via the contact details at the end of the report.

2. Themes and Trends

2.1 Overall themes

Considering that the 2022-2023 academic year was when generative AI came to prominence within the academy, and much of that discussion was focused on student usage, it is unsurprising that submissions concentrate heavily on the student learning experience and outcomes.

Many projects focus on using GAI to support personalised learning, interactive learning experiences, and additional student support. The submissions suggest that many see GAI as a tool of augmentation and impact rather than replacing their skillset, as outlined in many dystopian takes on GAI. Some of the responses may be seen as an attempt to deal with the tension between demands on time and overall workloads and to perform a range of tasks under time and resource pressure.

Tied to this, we can see much interest overall in building capacity – be it the capacity of individual academics to enhance the student experience or, in some cases, the broader digital transformation of the organisation. We did not ask for financial information or the cost of undertaking any submissions. Still, work is being undertaken that may benefit from some collective analysis and thought around cost-benefit. This is especially true where working at scale and combining LLM models for different tasks may make more economic sense.

These insights reveal a sector engaged in actively exploring the capabilities of generative AI to enhance the educational landscape, focusing on practical applications that benefit students and educators by improving learning processes, teaching methods, and overall educational experiences.

Few projects directly focused on operational efficiency at the organisational level, which is unsurprising. The ability of GAI to scale up in a cost-effective and meaningful way is still subject to much debate, and by their nature, there will be fewer of these projects. Moreover, attempting to change organizational-level processes is time-consuming and political. Hence, the time scales differ from those of more operational and discipline-focused case studies.

However, the University of Glasgow case study shows the direction of travel and emphasises the importance of upskilling staff during possible automation. It also highlights the need for central teams to control this process.

2.2 Future Trends

For several reasons, predicting the future in an area as fast-moving as GAI is complex. These tools are being integrated into widely used cloud services such as Microsoft 365, likely leading to unanticipated and emergent changes in staff and student behaviours. Depending on who you are, this is something to be welcomed, and the overall direction of travel is a human-AI hybrid in education and the workplace. An alternative view is that many of these technologies are unscalable due to inherent issues around hallucinations and other

'side-effects' that may prove to be unsolvable. This means that AI usage will be seen as a fad in the future.

Here, we will take a middle ground and present future trends based on where we will likely see *emphasis* rather than *success*.

Figure 1. Future Trends

Emphasis	Activity
Personalised learning experiences	There will be attempts to create more customised, student-centred pathways tailored to each student. A possible side effect is a more individualised approach and fewer shared learning experiences.
Enhancement of teaching methods	Individual academics will use GAI to enhance their performance and manage their workloads more effectively. There will be an emphasis on 'academic as creator' rather than academic as a user of GAI.'
Digital competencies	The introduction and embedding of GAI into the curriculum will emphasise preparing students for workplaces where GAI is ubiquitous. From a staff perspective, HEIs expect staff to have a baseline understanding of standard organisational GAI tools (eg. Microsoft 365).
Operational Efficiency and administrative automation	HEIs will look to automate routine administrative tasks. This will be seen in a period of shrinking budgets to allow staff to devote more time to student engagement and high-value external activities. GAI will manage more and more of the HEIs' back-office activities.
Collaborative and cross-disciplinary projects	GAI will provide versatility to foster collaboration between different departments and disciplines within HEIs, allowing more complex educational topics to be challenged.
Ethical and Responsible AI Usage	Growing awareness of the difficulty of ethical and responsible AI usage will result in the need to systematically address AI's impact on education, learning, and employment. HEIs will generate more rigorous guidelines and policies around GAI deployments.

Appendix

About these case-studies

The case studies listed below are presented “as-is” as examples of current practice in higher education around Generative AI. Advance HE has not undertaken any quality assessment of the work, and their inclusion here should not be considered an organisational endorsement.

The URL provided takes you to full details of the project including contact details for the project lead.

	Title	Lead	Institution	URL
1	Shaping the Future of Education: Assessing the Role of ChatGPT in Transforming Undergraduate Learning and Assessment Practices	Linda Marron	Edge Hill University	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Shaping-the-Future-of-Education
2	Enhancing Cross-Disciplinary Collaboration: Co-creating AI Skills Enhancement Resources through Student-Staff Best Practice Sharing Sessions.	Xue Zhou	Queen Mary University of London	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project-Enhancing-Cross-Disciplinary-Collaboration
3	AI for improved student learning & employability skills	Josephine Van-Ess	University of Sussex	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/AI-for-improved-student-learning-employability-skills
4	EnhAL-AI (Enhancing Assessment Literacy using Generative AI)	Edmond Sanganyado	Northumbria University	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/EnhAL-AI

5	Centre of Excellence Automation [Infrastructure project]	Automation Service	University of Glasgow	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Centre-of-Excellence-Automation
6	Data Science Skills for Research Project	Ola David	University of Nottingham (Researcher Academy)	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Data-Science-Skills-for-Research-Project
7	Suzanne Doria	AI in Action: Using AI Responsibly and ethically	Buckinghamshire New University	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Data-Science-Skills-for-Research-Project
8	Using AI to engender critical thinking in session planning and design	Jo Peat	Roehampton University	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Using-AI-to-engender-critical-thinking-in-session-planning-and-design
9	Mark Carrigan	Generative AI for Academics	University of Manchester	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Generative-AI-for-Academics
10	AI literacy program	AI literacy program	Coventry University	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/AI-literacy-program
11	Using AI to credit Intangible Assets	Prof Annabel Kiernan	Staffordshire University	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Using-AI-to-Credit-Intangible-Assets
12	DCC Help	Jake Renzella	University of New South Wales	https://www.advance-he.ac.uk/knowledge-hub/DCC-Help
13	Embedding AI- closing the gap between employment and education	Elizabeth Farrier-Cave	Canterbury Christ Church university	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Embedding-AI

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14	AE-Bot: Pioneering AI-Driven Accounting Education	Stephen Coetzee	University of Pretoria	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/AE-Bot
15	Study Smart: Staff and students co-constructing literacy at UON	Rob Howe	The University of Northampton	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Study-Smart
16	Making sense of Generative AI at the University of Westminster	Gunter Saunders & Doug Specht	University of Westminster	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Making-Sense-of-Generative-AI-at-the-University-of-Westminster
17	Generative AI assisted life-long teaching and learning through Higher Education (HE): a case study of coding learning for business students at Salford Business School	Kate Han	University of Salford	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Generative-AI-assisted-life-long-teaching
18	A comparative analysis of human-generated and AI-generated educational content and their different impact on students' experience and learning	Dr Gary F. Fisher	University of Derby	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/A-comparative-analysis-of-human-generated
19	Assessment practices and student behaviours surrounding Generative AI	Mike Richards	The Open University	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Assessment-practices-and-student-behaviours-surrounding-Generative-AI
20	Generative AI, Design Thinking and Solving Worlds Grand Challenges	Vishal Rana	Flinders University	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Generative-AI-Design-Thinking-and-Solving-World-Grand-Challenges
21	AI-Enhanced lesson planning: pioneering the future of teaching	Xiang Li	Arden University	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-

				Project/AI-Enhanced-Lesson-Planning
22	Harnessing AI tools for student support	Perry Share	Atlantic Technological University	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Harnessing-AI-tools-for-student-support
23	AI in Curriculum	AICADEMY	Coventry University	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/AI-in-Curriculum
24	Under Construction: Collaborative Content Development with Generative AI	Paul Glossop	University of Derby	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Under-Construction
25	Using Generative AI to support teachers' reflective practice	Keith Taynton	University of Derby	https://advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Using-Generative-AI-to-support-teachers-reflective-practice
26	Implementation of Universal Design Learning with ChatGPT as the learning Design Co-pilot	Dr Chi-Un LEI	The University of Hong Kong	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Implementation-universal-design-learning-chatgpt-learning-design-co-pilot
27	Exploring Student Attitudes and Current Adoption of Artificial Intelligence in Medical and Biomedical Education: A Comparative Study across UK and Malaysia Campuses	Dr James Woon	Newcastle University Medicine Malaysia	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Exploring-Student-Attitudes-and-Current-Adoption-of-Artificial-Intelligence-in-Medical-and-Biomedical-Education
28	Generative Artificial Intelligence as a potential tool in social work student placements	Clare Stone	Lancaster University	https://www.advance-he.ac.uk/knowledge-hub/Ai-Garage-Project/Generative-Artificial-Intelligence-as-a-potential-learning-tool-in-social-work-student-placements

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29	AI-Enhanced Learning	Maria Altamira	UBI Business School	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/AI-enhanced-learning
30	The impact of Generative AI in urban design and planning practice: assessing tools, tasks, skills, and pedagogical challenges	Juliana Martins	University College London	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/The-impact-of-Generative-AI-in-urban-design-and-planning-practice
31	UoU – WS2A Interweavings	Edward Crump	University of Universities	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/UoU-WS2A-Interweavings
32	AI impact on improving University students' academic writing	Alaa Aladini	Dhofar university	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/AI-impact-on-improving-University-students-academic-writing
33	AI for enabling reflective thinking self-evaluation student reports for the student portfolio & stakeholders.	Dr Balaji.S.K.Swa minathan	Oman College of Management and Technology	https://advance-he.ac.uk/knowledge-hub/AI-Garage-Project/AI-for-enabling-reflective-thinking
34	Empowering Women in the Algerian Sahara	Imad Guenane	University of Westminster	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/Empowering-Women-in-the-Algerian-Sahara
35	ChatGPT in Computing Education - a Policy White Paper	Matthew Shardlow	Manchester Metropolitan University	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/ChatGPT-in-Computing-Education
36	Personalised and inclusive online courses using GenAI	Christothea Herodotou	The Open University	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/Personalised-and-inclusive-online-courses-using-GenAI

37	GPT-powered virtual avatars for teaching and learning	David Ashworth	Coventry University	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/GPT-powered-virtual-avatars-for-teaching-and-learning
38	AI teacher's escape room: An interactive activity demonstrating generative AI for practical use as a teaching assistant.	Sam Doran	Xi'an Jiaotong Liverpool University	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/AI-teachers-escape-room
39	Deducing and Devising Artificial Intelligence Adoption in Higher Education: Exploring Attitudes, Intentions, and Behaviours of MSc Students Towards ChatGPT Utilisation and Academic Integrity (DDAIHE)	Dr Farhana Ferdousi Liza	University of East Anglia	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/DDAIHE
40	The Use of ChatGPT / Open AI in Safety Science Higher Education: Pragmatically Enhancing the Student Experience via Assessment Design	Dr Karen Klockner	Central Queensland University	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/the-use-of-ChatGPT-Open-AI
41	Using AI to gamify learning	Dr Mhairi Morris	Loughborough University	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/Using-AI-to-gamify-learning
42	AI for Student Learning & Research – A Co-created Student Resource	Paula Funnell/Cassandra Lewis	Queen Mary University London	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/AI-student-learning-research-co-created-student-resource
43	AI Empowerment in Education: Unleashing the potential of AI for Student Success	Dr Pauldy Otermans and Dr Stephanie Baines	Brunel University London	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/AI-empowerment-education-unleashing-potential-ai-student-success

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44	Developing technical competencies for AI tools in graduates via independent learning	Dr Moody Alam	University of Bath	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/Developing-technical-competencies-ai-tools-graduates-independent-learning
45	Can Generative AI be used to deliver personalised yet sustainable feedback to large cohorts?	Nazim Ali	Keele University School of Medicine	https://www.advance-he.ac.uk/knowledge-hub/AI-Garage-Project/Can-Generative-AI-be-used-to-deliver-personalised-yet-sustainable-feedback-to-large-cohorts



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