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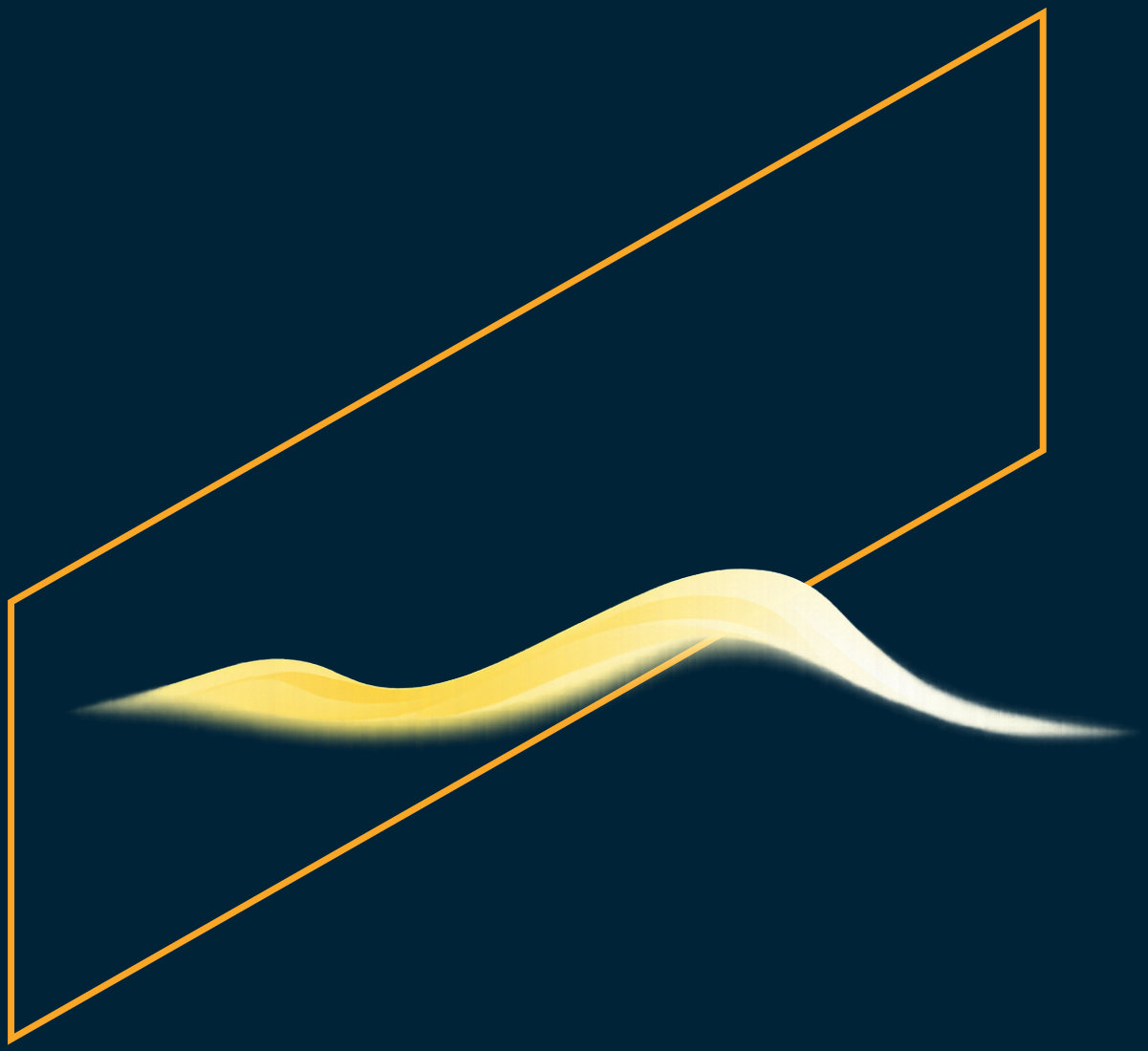

AI IN EDUCATION

SHAPING THE FUTURE TOGETHER

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EXECUTIVE SUMMARY

Artificial Intelligence (AI) and particularly Generative Artificial Intelligence (GenAI) is present in many aspects of Higher Education (HE). Universities do not lack principles, but they still lack sufficiently operational ways of translating them into practice. This paper provides policy-oriented contribution from the European Consortium of Innovative Universities (ECIU) in relation to AI in Education.

1 INTRODUCTION AND MOTIVATION

This paper argues that the main challenge for higher education is no longer recognising the relevance of AI but translating shared principles into workable institutional practices for teaching, learning, assessment, and governance. Artificial Intelligence (AI) and particularly Generative Artificial Intelligence (GenAI) is present in many aspects of Higher Education (HE).

Students and staff are using GenAI tools for a variety of reasons. Universities across the world have struggled to keep up with the pace of GenAI development and usage. Many universities have position papers and guidelines in place, but few universities have policies or strategies publicly available. Despite the challenges, and, given the rapid pace of technological progress, universities must assume a proactive role in approaching new working tools and methodologies. Universities are perhaps one of the best places for real debates about pedagogical methods and how AI can contribute in a reflective and constructive way, while being cognisant of the ethical challenges and the need for critical thinking related to AI use.

This paper provides an overview of AI in Education from the AI in Education Expert Group of the European Consortium of Innovative Universities (ECIU) – CLARINET. The group is focused on teaching, learning and assessment at Higher Education level, but there are obviously overlaps with research in Higher Education. This paper outlines the principles to be observed when using AI and the collective findings from experts across the ECIU network.

It presents five illustrative national pathways from France, Ireland, Sweden, Portugal and the Netherlands to show how different countries are addressing this key issue. It outlines some possible next steps and concludes with a call for sharing expertise, using existing frameworks and not trying to reinvent the wheel where possible.

2 ECIU CLARINET GROUP – AI IN EDUCATION EXPERTS

The ECIU network unites 13 research-intensive institutions to foster innovation and entrepreneurship. Our mission is to connect researchers, businesses, and policymakers to drive impactful collaborations. The CoLlective on ARtificial INtelligence in EducaTion (CLARINET) is a group of experts in AI in Education from member universities of the European Consortium of Innovative Universities (ECIU).

The aim of the group is to share expertise, inform ECIU Senior Management and contribute to the EU-wide conversation on AI in Education. The experts have a broad range of AI in Education expertise and come from an innovative, agile university mindset.

The group enables the ECIU universities to compare and share expertise with each other, keep abreast of developments in different national contexts, as well as to reassure themselves of their progress to date and to be a voice at EU level. The group has a shared repository of ECIU members' AI in education resources including institutional position papers, guidelines, common overview of AI in education across the network and radar comparison reports on AI in education.

CLARINET members are:

- Monica Ward (Dublin City University, Chair of CLARINET)
- Nelson Zagalo (University of Aveiro)
- Susana Caixinha (University of Aveiro)
- Paola Soledad Martínez Chiñas, Victor Edrei Robles Chávez (TEC de Monterrey)
- Alvaro Fernandez-Quilez (University of Stavanger)
- Frittella Francesca, Bernard Veldkamp, Merijn Snel (University of Twente)
- Daniele Agostini (University of Trento)
- Sari Leinonen (Tampere University)
- Thomas Grenier, (INSA Lyon)
- Maren Baumhauer (Hamburg University of Technology)
- Daniel Franco Punte, Antonio Espinosa Morales (Autonomous University of Barcelona)
- Linnéa Stenliden (Linköping University)
- Agnė Šulčiūtė, Ramunė Kasperė (Kaunas University of Technology)
- Juha Eskelinen, Andrea Brose (ECIU University)
- Olga Wessels (ECIU)

3 ECIU INSTITUTIONAL GUIDELINE ANALYSIS

This section provides an overview of the analysis of the ECIU institutional guidelines on AI in education. It is reassuring to see that these guidelines align with international guidelines (e.g. EU and UNESCO). Common themes include ethical and responsible use, pedagogical integration, legal and data protection and assessment and academic integrity. The analysis, identifying the commonalities and differences of the different guidelines, was done with the support of MistralAI, reviewed by institutional experts.

A. Ethical and Responsible Use

- All universities emphasise the ethical, responsible, and transparent use of AI, stressing the importance of academic integrity, critical thinking, as well as reflectivity, and human oversight.
- **Transparency:** Most require students and staff to disclose the use of AI tools in assignments, exams, or research, especially if the AI tool's output is directly incorporated. This includes how and the extent to which AI use has influenced the learning outcome and output.
- **Critical Evaluation:** Users must critically evaluate AI-generated content for accuracy, bias, and relevance.

B. Pedagogical Integration

- **AI as a Tool, Not a Replacement**: AI is positioned as a support tool for teaching, learning, and assessment, not a substitute for human judgment or creativity.
- **Adaptation of Teaching Methods:** Universities encourage revisiting assessment methods (e.g., oral exams, project-based learning, peer reviews) to ensure AI does not undermine learning objectives.
- **Digital Literacy:** There is a shared focus on developing students' AI literacy, including understanding AI's limitations, biases, and ethical implications. Educators also need additional training and support to become AI literate

C. Legal and Data Protection

- **Copyright and Authorship**: AI cannot be listed as an author or creator. Users must ensure compliance with copyright laws and intellectual property rights. This is a complicated and potentially costly area of consideration for universities.
- **Data Privacy:** Universities warn against inputting personal or confidential data into AI tools, especially those without robust privacy safeguards.
- **Compliance with Regulations:** All guidelines reference GDPR, institutional policies, and national laws (e.g., EU AI Act)

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D. Assessment and Academic Integrity Plagiarism

- **Redefining Assessment:** Universities are revising assessment formats to focus on higher-order skills (e.g. critical reflection and critical thinking) that AI cannot easily replicate currently.
- **Detection and Suspicion:** While some mention AI detection tools (e.g., Turnitin), all stress that human judgment remains central in assessing academic misconduct. Some universities advise against the use of AI detection tools due to inaccuracies and bias issues.

E. Additional Considerations

- **Academic Freedom and institution autonomy:** there was some variation across the group in relation to the degree of freedom for institutions in a national context, as individual academic's freedom in the context of AI usage in teaching, learning and assessment.
- **Equity and inclusion** – in line with international recommendations, there was a concern that equity (including access to AI tools) and inclusion should be key considerations and not sidelined when considering AI in education.
- **Critical engagement with human oversight** – universities and academics must ensure that there is critical engagement with AI tools and that human oversight is essential when AI tools are used.

- **Sustainable pedagogy** – the sustainability issues associated with AI usage are to the fore in many ECIU universities and they are very aware of the need to balance carefully the positive aspects of AI in education with the ethical issues, particularly sustainability, including environmental sustainability but also social and economic sustainability. Many ECIU universities have an Education for Sustainable Development approach in place whereby they weave in sustainability in a discipline-aligned manner in their programmes.

What emerges from the ECIU guideline analysis is not a lack of shared direction, but a strong convergence around a common normative core: transparency, human oversight, academic integrity, AI literacy, and data protection.

The main differences lie less in principle than in implementation, particularly in how much autonomy is left to institutions and individual educators, and in how far assessment redesign and governance structures have progressed. This suggests that the next step for ECIU is not to formulate new principles, but to help translate existing ones into usable institutional practices, support instruments, and shared reference points.

4 PRINCIPLES

Synthesising the guideline clusters mentioned above, there are several key principles on AI in education across the ECIU universities. These align with principles of the European University Association (EUA), EU and UNESCO principles (ref, xxx). These include:

- Need for ethical, transparent, and critical use of AI, with a focus on human oversight and academic integrity
- Assessment - assessment to focus on higher-order skills.
- Educator Role - Educators must guide and disclose AI use, including if it has been used, what for and how.
- Student Responsibility - Students must disclose AI use (what for and how) and critically evaluate outputs.
- Data Protection - All warn against personal/confidential data in AI tools.
- AI Literacy - All promote critical AI literacy and source evaluation.

Moreover, it must be acknowledged that the impact of AI differs across disciplines. For example, in some disciplines (e.g. Chemistry) it can be very beneficial, as it enables students to carry out potentially dangerous

experiments via Virtual Reality (VR), rather than in a lab and it can allow them to experiment with new chemical structures and combinations that would be impossible or extremely difficult in real life.

In other disciplines (e.g. Media), it has an almost existential impact. The ability of AI tools to produce text, audio and video materials threatens the fundamental role of journalists, photographers and filmmakers amongst others.

In some disciplines (e.g. nursing), there may be a more impact as there is still a large component of the job that requires a human. Computing is both positively and negatively impacted.

Positively impacted as computer scientists are the people who develop AI systems and negatively impacted (like media) as AI tools can now generate the outputs (code) that previously required humans.

There is still a need for humans (including in media and computing), but the nature of the role and work will change as AI capabilities increase.

This section provides examples from just four disciplines and it is important to note that AI has an impact on all disciplines. This discipline-specific impact needs to be considered when discussing AI in Education.

5 NATIONAL PATHWAYS

France, Ireland, Sweden, Portugal and the Netherlands

Most national organisations are working on guidance and frameworks on AI in Education. This section provides five illustrative national pathways from France, Ireland, Sweden, Portugal and the Netherlands in relation to AI in education.

While only five national pathways are provided here, obviously each member of the ECIU network has its own national pathway and context. These illustrative national pathways demonstrate that while there are many commonalities in these different countries, the focus is slightly different in each context.

French National Pathway

In June 2025, the French Ministry in charge of Higher Education and Research (HER) established a strategic framework to integrate Artificial Intelligence into HER institutions. This document emphasises critical recommendations such as better anticipating labour market changes,

adapting teaching methods and course content to AI technologies, and disseminating AI across all research sectors to support professional evolution.

This strategy calls on Higher Education institutions to step up their efforts regarding the adoption of AI, provide training, and support the necessary transformations, in order to ensure that educational systems and students remain competitive and adapt to technological changes. It also recommends that HER institutions adopt an AI Policy (Recommendation #25).

The inter-ministerial agencies DINUM (direction interministérielle du numérique) and DGESIP (Direction générale de l'enseignement supérieur et de l'insertion professionnelle) with the public interest group AMUE (mutualisation des universités et établissements d'enseignement supérieur ou de recherche) are engaged in developing shared governance structures, including an AI Policy (proposed by DEMEOS).

They aim to create common tools for the institutions and research ecosystem, ensuring digital sovereignty through a coordinated approach. Work is underway, but few GenAI tools are now nationally tested, based on MistralAI as: MistralESR (HER institutions with Mistral AI), RagARenn : (the first Proof of Concept, now nationally tested), Emmy (the CNRS AI Chatbot for researchers)

Irish National Pathway

The Higher Education Authority in Ireland published a Generative AI in Higher Education Teaching & Learning Policy Framework (O'Sullivan et al., 2025a). The purpose of the document purpose is to guide educators, academic leaders, and professional staff in making informed, values-based decisions about how gen AI is adopted and integrated into educational practice.

The policy framework seeks to provide HEIs with a structured but adaptable set of values to underpin institutional decision-making on Gen AI and to encourage responsible and pedagogically meaningful adoption of gen AI that safeguards the interests of students and staff. It aims to promote national coherence while enabling institutional autonomy and innovation and position Irish higher education as a leader in the responsible and values-driven adoption of gen AI.

Key principles include Academic Integrity, Transparency, & Accountability, Equity & Inclusion, Critical Engagement, Human Oversight, & AI Literacy, Privacy & Data Governance and Sustainable Pedagogy.

The accompanying document Generative AI in Higher Education Teaching & Learning: Principles for Ethical AI Adoption (O'Sullivan et al., 2025b) provides recommendations for coherent implementation of the policy framework for institutions.

There is a centralised national hub for AI in Education (HEA, n.d.) and these resources are helpful to universities and academics in Ireland and institutions are at different stages of development in relation to AI in education. These national-level documents will inform developments in this space, as universities continue to develop their resources and plans for AI in Education.

The Irish National Academic Integrity Network (NAIN, n.d.) has produced several resources that support academic integrity including xxx and the recently updated Lexicon, which now contains new additional of AI-related terms in the academic integrity context.

Swedish National Pathway

Sweden's Ministry for Public Administration published its National AI Strategy in February 2026 and while the focus is on business and Sweden becoming an international leader in AI, education and Higher Education is also one of its considerations. The strategy notes that AI competence and skills in higher and postgraduate education are a necessary part of this and must be developed and that universities and higher education institutions have become the primary laboratory for balancing academic integrity with the necessity of AI literacy.

There are three key pillars in relation to AI in Education in Sweden and these are Sovereign Research, Pedagogical Reform, and Strict Governance. The accompanying Action Plan for Sweden's AI Strategy (APSAI, 2026), states that universities and higher education institutions are required to report on their progress in developing AI-related courses and initiatives to integrate relevant AI components into curricula.

The Swedish AI strategy says that excellence clusters for AI should be established, enabling Swedish higher education institutions engaged in top-class scientific research to cooperate as and continue to be international leaders in AI.

Developments in AI can foster interdisciplinary initiatives. One example is the Artificial Intelligence (AI), Simulation and Teaching Laboratory (AIST, 2026), which is hosted by Linköping University and is one of the largest research groups in the Nordic countries focusing on AI, simulation and teaching. More of these types of interdisciplinary labs are emerging across Europe and demonstrate the possible positive role AI can play in education.

Portuguese National Pathway

In Portugal, the Agenda Nacional de Inteligência Artificial (ANIA), published in January 2026 under the National Digital Strategy action plan, provides the main national framework for AI development. Rather than focusing specifically on higher education, it addresses the wider ecosystem and is organised around four axes — Infrastructure and Data, Innovation and Adoption, Talent and Skills, and Responsibility and Ethics — through 32 initiatives involving universities, research centres, companies and public administration.

Recent work developed through the collaboration between the University of Aveiro and the National Council for Pedagogical Innovation in Higher Education (CNIPES), and presented in April 2026 at a national rectors' conference, suggests that the key issue is not lack of activity, but lack of coordination.

A national survey covering 68 higher education institutions found that only 14.7% reported AI policies already in place, while 42.6% were developing them and 42.6% had none. At the same time, 39.7% of institutions reported activity across teaching, research and management, but only 19.1% showed full maturity in all three areas.

This points to a system where adoption is advancing faster than formal governance and reinforces the need to move from fragmented experimentation to evidence-based coordination — a pattern that is likely to resonate beyond Portugal.

Dutch National Pathway

The AI-GO framework for AI literacy in education has been developed by Npuls in the Netherlands. It provides an overview of what AI literacy entails, why it is important, and how educational professionals can promote it in vocational education and training schools, universities of applied sciences, and research universities. It gives institutions a starting point for developing and refining the AI literacy of their staff and students, defining possible indicators and examples. It will be expanded with a practical guide for designing education and professional development in the area of AI literacy.

Reflection

It is interesting to note that these five countries have National AI Strategies with varying references to education in the documents. All five countries are aware of the requirements under the EU AI Act, GDPR concerns and the need for a human-centred approach to AI. The AI in Education environment varies with France having a French GenAI company (MistralAI), Ireland having recommendations, Sweden placing report requirements on universities and Portugal having an ideological discussion on the topic.

While universities internationally recognise the need to have clear, strong AI guidelines in place, to date, very few universities have an official, standalone, publicly available AI policy. Often there is an AI component in other teaching and learning and research policies (e.g. Academic Integrity policy, research AI policy, and a limited number have an AI Strategy.

This is not because of a lack of willingness to develop AI policies and strategies, rather the difficulties senior management face when writing policies and strategies and this includes the complexities of AI in Education and the fast pace of change. There is also an element of not wanting to get it wrong and waiting for others to lead in this space. This will probably change over time as more institutions develop and publish their policies.

6 NEXT STEPS AND FUTURE DEVELOPMENTS

As new tools emerge and the capabilities of AI tools increase, universities need to consider their next steps and future development in the AI in Education space. There continues to be developments in this area and various framework and supporting instruments are being formulated. It is helpful to consider this from three perspectives or pillars – Knowing about AI, Working with AI and Being without AI.

Knowing about AI

It is important to consider the foundational conditions for institutional action in relation to AI in Education. These include a common language, shared understanding, AI literacy, and ethical and epistemic awareness. There is a need to create shared reference points, not rigid rules, in other words, a common framework for higher education without prescribing identical institutional responses.

Working with AI

There needs to be a focus on the practical implementation of AI. This includes assessment redesign, pedagogical uses, institutional guidance, and mechanisms for sharing and comparing emerging practice across institutions. The policy priority in this regard is to develop practical support instruments and coordinated experimentation, not just encouraging innovation, but to help institutions learn from one another and turn emerging practice into usable guidance.

Being without AI

AI has a role in education but consideration also needs to be given to the equally important issue of limits: the role of human oversight, the exercise of critical judgment, and the ability to recognise when AI should not be used, especially in contexts where authorship, responsibility, or meaningful learning depend on non-delegated human work.

It is important to highlight that AI -free space is also relevant to continue developing critical thinking capacity which is essential for interacting with AI. The policy priority here would be to preserve spaces of non-delegated human judgment and responsibility, so that the future of AI in education is not framed only in terms of expansion of use.

Across all three pillars, the main implementation challenge is to bridge strategy and operations, helping universities move from high-level policy statements to workable institutional procedures.

Future trajectories

Future trajectories of AI integration will vary depending on educational value, institutional readiness, cost, and ethical safeguards. Currently, many AI tools have a 'free' version, but they are free in the sense that they are free to use, but the user's data is being fed into the model and used for training and other purposes. The cost of AI tools that ensure high level of compliance with IP and data protection laws is high and the area is a challenging one for individual users to navigate. However, the immediate priority is not prediction — it is building institutional capacity for responsible action now.

A low-level integration scenario is one in which AI is used to some extent in the education process but does not have a dominant role in education. A medium-level integration scenario is one in which AI is used on a regular basis and is a normal part of the education process, alongside traditional education practices. A high-level integration scenario is one in which AI is a dominant component in education.

At this point in time, it is difficult to predict which scenario will play out. Regardless of which scenario emerges, it is important for educational leaders and institutions to continually monitor developments and contribute to the development of international (e.g. EU) and national guidelines on AI in Education, ensure that a research-informed approach is adopted and that staff and students are provided with relevant upskilling opportunities in AI Literacy.

Furthermore, they should ensure that education and interdisciplinary technical education, rather than technology, is at the heart of discussions on AI in Education. While universities cannot control how students access AI tools outside of the university setting, they should promote appropriate teaching and evaluation methodologies to ensure effective learning.

ECIU Universities are now focussing on AI literacy for staff and students and curriculum renewal. AI literacy equips staff and students with the ability to interrogate how AI systems work, to recognise their limits and biases, apply critical thinking to AI use and to consider issues of knowledge and power in educational and societal contexts.

Curriculum renewal can enhance programmes and courses offered to students in this AI-infused era. This does not automatically imply a complete redesign of all programmes and courses, but rather thoughtful and systematic review of programmes and courses to ensure that they are relevant for students and deal with the challenges, and avail of the opportunities, provided by AI.

CLARINET supports the ECIU institutions in this overall approach and the ECIU's broader role in shaping the AI in Education agenda.

7 CONCLUSION

The analysis of AI in education across ECIU universities indicates that these institutions are broadly aligned with their European counterparts. Organisations such as the EUA provide valuable guidance on navigating AI in higher education, emphasising ethical integration, digital sovereignty, and the preservation of academic values amid rapid technological change (EUA, 2026).

The emergence of generative AI tools into the public domain triggered significant activity and reaction across the higher education sector. Academics were compelled to redesign assessments to address the challenges these tools posed to traditional formats.

This redesign imperative remains ongoing, as the capabilities of GenAI continue to evolve — requiring institutions to either deliberately integrate AI tools into assessment design or actively design them out, the latter becoming increasingly difficult to achieve. Challenge-Based Learning (CBL), a signature pedagogy of ECIU universities, represents an innovative and particularly suitable approach to teaching, learning, and assessment in this AI-infused era (e.g. DCU-CBL, 2025).

Interactive Oral Assessment (Ward et al., 2024) offers a further robust and authentic response to these challenges — one that may promote skill development, employability, and academic integrity while remaining resilient across disciplines and in the face of advancing AI capabilities.

Universities must sustain their commitment to adapting in response to the evolving AI landscape. While there may be a temptation to regard assessment redesign as a completed task, continuous monitoring of AI developments remains essential. Senior leaders, academics, and learning support professionals — all operating under significant time pressures — should draw on existing resources and frameworks rather than duplicating effort.

Most importantly, universities have both a responsibility and an opportunity to share their expertise openly within their networks and across the wider international higher education community. In doing so, they serve the interests of their staff, students, and society — a genuinely mutual and worthwhile endeavour.

Being a consortium of innovative universities, ECIU and its partners stand ready to support AI developments by providing a testbed to experiment with AI in education innovations, nurture a platform to connect universities and stakeholders across Europe, scale and spread successful AI practices across Europe and help shape how AI is governed in education.

ECIU is committed to help building towards a European approach to AI in education, by contributing to EU frameworks and standards, aligned with initiatives of the European Education Area and together with European partners to ensure system-level impact beyond individual universities.

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