

NORDIC INSTITUTIONAL RULES AND REGULATIONS IN THE LIGHT OF GENERATIVE AI

Jens Bennedsen¹, Juha Kontio², Janne Roslöf³, Elizabeth Keller⁴, Fredrik Georgsson⁵,
Marisol Rico Cortez⁶

¹Department of Electrical and Computer Engineering, Aarhus University

²Turku University of Applied Sciences

³Faculty of Technology, LAB University of Applied Sciences

⁴Department of Learning, KTH

⁵Planning Office, Umeå University

⁶Department of Product Development, Production and Design, Jönköping University

ABSTRACT

Generative artificial intelligence (GenAI) is rapidly becoming embedded in students' study practices, challenging universities to balance innovation with academic integrity, equity, and valid assessment. For the CDIO implementation community, the key question is which institutional mechanisms help programmes and teachers integrate GenAI while protecting intended learning outcomes and assessment credibility. We analyze GenAI rules and guidelines at six Nordic CDIO institutions using Diffusion of Innovations Theory (compatibility, trialability, observability). **Key findings:** (1) baseline principles converge on student/teacher accountability, growing expectations for disclosure, and GDPR-driven steering toward sanctioned tools (e.g., Microsoft Copilot); (2) trialability is operationalized through implementable "rules-in-use" (traffic-light models, course templates, declarations) that translate policy into course practice and support CDIO Standards 9 and 11; and (3) observability varies with organizational context: multi-faculty universities depend on recurring cross-faculty partners (central pedagogical units, AI labs/policy labs, working groups) to diffuse and update guidance, while more centralized or single-faculty settings emphasize streamlined recommendations and teacher-led, course-specific implementation. **Implementation implications for CDIO:** (i) adopt shared course-level decision artefacts to enable consistent yet discipline-sensitive implementation; (ii) resource faculty support for assessment redesign (Standard 9); and (iii) build feedback loops for continuous improvement and assessment transparency (Standard 11).

KEYWORDS

Generative AI, Assessment, institutional rules, higher education governance, assessment design, Diffusion of Innovations, Standards: 9,11

INTRODUCTION

The advent of ChatGPT in November 2022 sparked a very rapid growth in the availability and capability of GenAI. Many other GenAI-based applications (Mistral, Perplexity, CoPilot, etc.) and integration of AI in other tools (e.g. grammar and spell checking in Microsoft Word, or tools that can write code from a specification in programming environments) followed the ChatGPT trend. When searching the web today (if you “Google” something), we automatically get an AI-generated answer – AI is everywhere in the digital domain.

Students are bright and have quickly started using GenAI when doing their assignments, exams etc. It becomes difficult to find out if it is the student or the GenAI who created a solution. This gives rise to many questions, such as: Is it acceptable to use GenAI in my assignments? If it is acceptable, how and for what can I use it? What is the environmental impact of GenAI? How do I cite work created by GenAI? What about privacy? Can more privileged students have unfair advantages (afford better versions of GenAI)?

The increased adoption of GenAI places significant pressure on universities to develop policies and guidelines in response. Luo (2024) argues that *“A more inclusive approach needs to be reflected in the policies to address issues around originality in students’ work. Rather than stressing originality from a surveillance angle, policies can place more emphasis on the available support to students in producing original work that is meaningful to their learning.”* (p. 662).

Several international organizations like UNESCO (Sabzalieva & Valentini, 2023) and OECD (OECD, 2023) have published guidelines on the use of Gen AI. These guidelines are quite generic (e.g. digital poverty) and are not specific to higher education (HE). UNESCO has also published AI competence frameworks for students and teachers (UNESCO, 2024a; UNESCO, 2024b). Furthermore, UNESCO calls for national AI strategies to include HE explicitly and stresses the need to train university faculty and researchers in GenAI use, including prompt engineering, ethical considerations, and pedagogical integration (UNESCO, 2023).

All these questions have made it clear to institutions that they need an institutional policy to help individual teachers. In addition, many institutions offer detailed guidance for the use of GenAI in the classroom

RELATED WORK

Although only slightly more than three years have passed since the launch of ChatGPT, a substantial body of research on GenAI policies in HE has already emerged. A Google Scholar search for “institutional policies” guidelines “generative” “AI” returned approximately 6300 results (December 19, 2025), reflecting the rapid expansion of the field. As expected, much of this literature is recent and thus unevenly cited; among the five most cited publications, citation counts range from 269 to 17, with one study still available only as a non-peer-reviewed preprint. The following paragraphs summarize four peer-reviewed contributions that are particularly relevant to this study.

Jin, Yan, Echeverria, Gašević, and Martinez-Maldonado (2025) analyzed GenAI policies from 40 universities worldwide using Diffusion of Innovations Theory (Rogers, Singhal, & Quinlan, 2019), focusing on compatibility, trialability, and observability. Their findings show that most institutions emphasize academic integrity, ethical AI use, enhancement of teaching and learning, assessment design, transparency, privacy, and human-centric competencies. In

contrast, relatively few policies address continuous evaluation, collaboration, or ongoing monitoring.

McDonald, Johri, Ali, and Collier (2025) examined documents from 116 U.S. research-intensive (R1) universities using open coding. They found that 73 institutions encouraged the use of GenAI, typically accompanied by extensive guidance, while 43 discouraged its use. Their analysis highlights the strong relationship between institutional stance and the level of practical support provided to staff and students.

Spivakovsky et al. (2023), based on interviews and discussion platforms at Kherson State University, proposed four key recommendations: revising syllabi to integrate GenAI and promote critical thinking, educating faculty and educational support staff in GenAI, conducting information campaigns on AI literacy, and including guidance on GenAI use in scientific publishing.

Finally, An, Yu, and James (2025) analyzed GenAI guidelines from the top 50 U.S. universities using topic modeling, sentiment analysis, and qualitative thematic analysis. They identified recurring themes related to syllabus statements, assessment redesign, ethical use, AI detection tools, and transparency. For staff, policies emphasize privacy, security, and limitations of GenAI, while for all stakeholders, they highlight academic integrity, disclosure, and responsible use.

CASE STUDIES

The following sections present cases from six Nordic CDIO institutions on their policy and guidelines for GenAI.

Method

We have used the same theoretical lens as Jin, Yan, Echeverria, Gašević and Martinez-Maldonado (2025), namely Diffusion of Innovations Theory (Rogers, Singhal, & Quinlan, 2019), to present the cases in the same way (see table 1 in (Jin et al., 2025) p. 4). We therefore focus on the characteristics (Compatibility (C), Trialability (T) and Observability (O)) and themes:

Academic Integrity and Ethical Use of AI (C): Use Gen AI tools in ways that uphold academic integrity and align with principles of originality and honesty.

Enhancing Teaching and Learning (C): GenAI is a tool to improve teaching methodologies, enhance learning experiences, and foster continuous learning.

Compatibility Fostering AI Literacy and Skills for the Future (C): Develop AI literacy and responsible use of AI tools to prepare students for a future where AI is ubiquitous.

Information Security and Data Privacy (C): Safe and secure use of AI technologies, compliance with policies, and protection of sensitive information.

Support for Diverse Educational Needs and Equity (C): Ensure equitable access to AI tools and support diverse educational needs, including personalized learning and support for students with disabilities.

Integrating AI into Educational Practice (T): Encourage the use of AI for content creation, interactive learning, and adapting teaching and assessment strategies.

Critical Evaluation and Human-Centric Perspectives and Competencies (T): Promote a critical stance toward AI-generated content and prioritize human-centric skills, including information verification and critical evaluation.

Transparency and Privacy (T): Transparency in AI use, proper citation of AI-generated content, and protection of privacy.

Policy Communication (T): Clear communication regarding AI use policies and guidelines for faculty and students.

Assessment Design and Authentic Assessments (T): Design assessments that evaluate higher-order thinking skills and are resistant to being solved solely by AI.

Continuous Evaluation (O): Test and evaluate the effectiveness of AI tools through new assessment methods and periodic evaluations involving various stakeholders.

Collaboration and Discussion (O): Foster collaboration and dialogue among educators, students, and stakeholders to address AI-related challenges and opportunities.

Ongoing Monitoring (O): Continuously monitoring AI technologies and adapting policies and guidance as understanding and technologies evolve.

Case Finland: LUT Universities and Turku UAS

The integration of AI into HE in Finland is guided by ethical, pedagogical, and strategic principles. The Finnish National Agency for Education emphasizes AI literacy for both students and educators, advocating for responsible use of AI in teaching, assessment, and personalized learning. Institutions are encouraged to develop clear policies and ensure equitable access to AI tools, while educators are supported through professional development.

ARENE, the Rectors' Conference of Finnish Universities of Applied Sciences (UAS) (<https://arene.fi/en/>), serves as a cooperation forum for universities of applied sciences. ARENE has recognized the importance of a structured approach to AI. Arene has published recommendations on the use of AI in education, with the latest update released in October 2024. These recommendations are publicly available (ARENE, 2024a, ARENE 2024b). The recommendations have been defined at the organizational, teacher, and student levels, with each university of applied sciences preparing its own guidelines independently. The objective is to promote ethical, transparent, and competent use of AI, enhancing both educational and professional competencies. In addition, the recommendations include a traffic light model that clearly communicates when and how AI tools may be used in course assignments.

Turku UAS follows the ARENE recommendations, and concrete guidelines are published on the university intranet. Another practical example is the LUT Universities that include two independent parts, LUT University and LAB UAS. Most of the guidelines and policies, e.g. The AI-based tools policy (for students), are common for both HE institutions (LUT Universities, 2025).

Compatibility

Academic Integrity and Ethical Use of AI: Turku UAS emphasizes responsible use of AI, stressing that authors remain fully accountable for any outputs and must report their use according to assignment instructions; undisclosed use is considered fraud. Ethical principles, originality, and transparency define expected academic conduct. LUT Universities similarly require responsible and ethical use, obligating students to document how AI was used. Any use against instructions or attempts to conceal AI involvement is regarded as academic misconduct, and AI must never be used for dishonest purposes.

Enhancing Teaching and Learning: At Turku UAS, AI is encouraged as a supportive learning assistant, with teachers guiding its use through the traffic light model. AI is positioned as a tool that enhances learning rather than replaces it. LUT Universities echo this approach by promoting AI as a learning and work-life skill. Teachers can either require or prohibit AI use, and AI is framed as a helpful tutor while ensuring that student learning remains central.

Fostering AI Literacy and Skills for the Future: Turku UAS identifies AI literacy as a strategic institutional goal, encouraging all staff and students to strengthen their AI competencies. LUT Universities also emphasize AI literacy, expecting students to reflect on how AI supports their learning and contributes to the development of future-oriented expertise.

Information Security and Data Privacy: Turku UAS instructs users not to input confidential or personal data into AI systems unless using secure institutional tools like Microsoft Copilot, stressing compliance with data-protection guidelines. LUT Universities similarly require the use of university credentials when accessing Microsoft Copilot to ensure data security. Students bear responsibility when using external AI tools and must avoid entering sensitive information into any AI service.

Support for Diverse Educational Needs and Equity: Turku UAS highlights AI as a tool that can support diverse learning needs and promote equitable access by offering tools and training. LUT Universities likewise encourage the use of AI to support learning, emphasizing responsible and equitable practices.

Triability

Integrating AI into Educational Practice: Turku UAS integrates AI into education using the traffic light model, which clarifies whether AI is required, allowed, or prohibited in each assignment and ensures staged implementation across programs. LUT Universities also allow teachers to define assignment-specific AI rules, requiring students to follow these instructions and document any AI use.

Critical Evaluation and Human-Centric Perspectives and Competencies: Turku UAS trains students to evaluate AI critically, verify accuracy, and maintain strong human-centric competencies such as critical thinking. LUT Universities reinforce this expectation: students must verify AI outputs, cannot present AI-generated text as their own, and must clearly demonstrate their personal contribution.

Transparency and Privacy: At Turku UAS, AI use must be reported according to assignment requirements, with the traffic light model ensuring transparency. Privacy is safeguarded through institutional guidelines. LUT Universities similarly require students to document AI use and emphasize privacy and data-security practices, encouraging reliance on secure institutional tools.

Policy Communication: Turku UAS disseminates policies through institutional platforms, offering detailed guidance for both staff and students, including instructions related to the traffic light model. LUT Universities publish and regularly update policies on their intranet, complementing them with assignment-specific instructions from teachers.

Assessment Design and Authentic Assessments: Turku UAS designs assessments to ensure originality and higher-order thinking, treating undisclosed AI use as fraud and regulating AI use at the assignment level. LUT Universities ensure that assessments clearly reflect the student's own work; AI use must never compromise learning objectives, and teachers may prohibit AI where necessary.

Observability

Continuous Evaluation: Turku UAS maintains feedback and monitoring mechanisms and updates policies as AI technologies evolve. LUT Universities likewise conduct periodic updates and encourage students to request guidance and share feedback on AI use.

Collaboration and Discussion: Turku UAS fosters collaboration and dialogue among staff and students, enabling open exchange about AI practices and experiences. LUT Universities similarly encourage both students and teachers to discuss and reflect on their AI use, supporting collective learning.

Ongoing Monitoring: Turku UAS continuously monitors AI developments and updates policies accordingly, while encouraging participation in national discussions. LUT Universities also follow both internal and national AI developments, ensuring that guidelines remain current and responsive.

Umeå University, Sweden

Umeå University is a comprehensive university in the northern part of Sweden with research and education distributed over four faculties, 150 study-programmes at first and second cycle level and over 1600 courses. Out of the courses, some 25 include “Artificial Intelligence” in the name, and these are distributed over all faculties. By tradition, the faculties are rather autonomous with different traditions when it comes to assessment etc., making it hard to present a clear view of all actual pedagogical activities related to GENAI.

Compatibility

Academic Integrity and Ethical Use of AI: Umeå University's guidance states that existing rules for grading and disciplinary cases also govern AI use, and teachers must specify permitted aids during tests and examinations (UMEAA 2025b). The policy further requires transparent labelling of AI-generated material and stresses the legal ambiguity of copyrighted input - promoting caution and documentation. This stance dovetails with the EU AI Act's risk-based framework—human oversight, accountability, and robustness - anchoring AI use within academic norms and legal compliance.

Enhancing Teaching and Learning: Institutional initiatives seek to enhance pedagogy without displacing human judgment. TAIGA (2026) provides venues and support for educators and students across faculties, framing “AI for the Good of All” and maintaining a focus area on Education and AI. Faculty seminars (e.g., #frAIday talks (UMEAA n.d. a)) and medical faculty teaching days explore ethical, technical, and practical dimensions—from CoPilot-assisted grading to responsible use in health education—consolidating a culture of reflective adoption.

Fostering AI Literacy and Skills for the Future: Umeå University fosters AI literacy through many formal courses (e.g., Introduction to AI in Schools (UMEAA 2024a), and Digital Dilemmas: Feminist Perspectives on Artificial Intelligence (UMEAA 2026) to mention only a few) and through participation in Erasmus+ Teacher Academies aimed at strengthening teacher education in the AI era (UMEAA 2025a). At the research/policy interface, the AI Policy Lab (UMEAA n.d.b) advances governance literacy—training scholars and decision makers to navigate compliance and societal impact—thereby bridging technical skills with trustworthy AI competencies (UMEAA n.d. c).

Information Security and Data Privacy: Internal guidance emphasizes confidentiality, data protection, and copyright compliance in AI development and use. Reference frameworks - including DIGG's AI trust model (DIGG 2026) - are recommended to build trust and transparency, and the human in the loop requirement is highlighted to ensure monitoring and accountability for outputs. Complementarily, European ethical guidelines foreground privacy and data governance as conditions for trustworthy educational applications.

Support for Diverse Educational Needs and Equity: University policy and European guidance converge on fairness, non-discrimination, and inclusivity—recognizing AI's promise to support diverse learners and the parallel obligation to mitigate algorithmic bias. TAIGA's (UMU TAIGA) transdisciplinary posture and education focus signal a commitment to equity-oriented design and adoption across programs, including domains beyond computing.

Trialability

Integrating AI into Educational Practice: Umeå University cultivates pilotability through workshops, seminars, and faculty teaching days that invite practical experimentation with generative tools and automated feedback, paired with peer exchange and critical appraisal (UMEAA 2024b). Research on no-code AI in HE provides tested methodologies for integrating machine learning into non-technical courses, thereby lowering barriers and expanding participation.

Critical Evaluation and Human Centric Perspectives and Competencies: The AI Policy Lab7 explicitly orients toward human-centred AI, developing tools and governance practices that uphold ethical, legal, and social values. As part of a broader scholarly mission, Umeå University advances responsible AI through leadership in ethics and policy; this institutional capability frames educational use as inseparable from human agency, societal wellbeing, and democratic accountability (UMEAA 2025c).

Transparency and Privacy: Policy requires clear disclosure when interacting with AI systems (e.g., chatbots) and mandates labeling of AI generated outputs. Privacy safeguards and risk classification under the AI Act anchor institutional expectations, while European ethical guidance equips educators with practical questions for classroom deployment—supporting transparency by design in teaching and assessment.

Policy Communication: Umeå University communicates policy via dedicated pages for AI in education and AI in professional practice, reinforcing the message that academic integrity rules apply to generative tools. TAIGA's web presence and news items amplify these messages with events, training, and research updates—helping staff and students to contextualize policy in daily teaching.

Assessment Design and Authentic Assessments: Institutional discourse acknowledges that GenAI complicates traditional examinations, pointing toward authentic and process-

oriented assessments that elicit higher order judgment and originality (UMEAA 2026b). External scholarship underscores the tension between workforce relevant digital skills and preserving scholarly autonomy—suggesting assessment redesign to reconcile these duties within credible academic standards.

Observability

Continuous Evaluation: Guidance on developing AI systems at the university stresses ongoing risk assessment, documentation, and data governance—tools that enable continuous evaluation of both systems and practices. This complements external frameworks that call for iterative monitoring of fairness, safety, and privacy, especially in educational deployments. In a near future Umeå University's digitalization policy (UMEAA 2023) is to be complemented with an AI-policy for GenAI and Digitalization (including AI) will be made a permeating perspective for all education at Umeå University.

Collaboration and Discussion: TAIGA's interdisciplinary model and the AI Policy Lab's advisory and training functions institutionalize collaboration—bringing educators, researchers, and external stakeholders into sustained discussions about emerging issues. European projects (Erasmus+ Teacher Academies) extend this dialogue internationally, strengthening observability and shared learning.

Ongoing Monitoring: The university's "Using AI at work" policy emphasizes human oversight ("human in the loop") and compliance with the EU AI Act's risk categories, supporting ongoing monitoring of deployed systems. This governance posture—linked to labeling requirements and disclosure duties—cultivates institutional habits of accountability and traceability in educational contexts.

KTH Royal Institute of Technology, Sweden

KTH Royal Institute of Technology (KTH) is a single-faculty institution. Up to the time this paper is being produced, KTH only has recommendations (not a policy) in line with DIGG's guidelines for GenAI in public administration, adapted by the E-learning team to be more relevant for teachers at KTH. This approach was suggested by a working group, initiated by the KTH faculty council on 6 March 2024.

Compatibility

Academic Integrity and Ethical Use of AI: KTH advocates for the effective use of GenAI, taking into consideration its legal and ethical aspects. This is done by highlighting considerations on the use of different tools. In addition, users are strongly recommended to read the terms of service before using a GenAI tool. These can be summarized in the following five points:

1. Only use GenAI when it is relevant and appropriate.
2. Have a human-centric and respectful approach to GenAI.
3. Work critically and with human review ("human-in-the-loop").
4. Take GDPR and copyright into account.
5. Be transparent about how you use GenAI.

Enhancing Teaching and Learning: Through clear information early on in a course, students are expected to be told how and when they are to use GenAI in graded course activities. For this reason, each course at KTH is recommended by the Faculty Council to have course-specific information about GenAI published in both Canvas (current Learning Management

System) and the course memo. To speed up and simplify scientific information retrieval, researchers are also made aware of the risks of inaccurate information and fictitious references.

Fostering AI Literacy and Skills for the Future: For students, OpenAI "Study mode" has been suggested for a more structured way of studying while being interactive and supporting a more active and reflective approach to learning. For staff, a hands-on workshop with focus on GenAI tools (mainly Chat GPT) aims to streamline work tasks. Among different examples, the topic of sustainability and GenAI has been raised to bring awareness of the energy consumption and ecological footprint of a GenAI tool. This was done through a discussion in a Lunch 'n' Learn, led by KTH faculty.

Information Security and Data Privacy: Information on the intranet is found with regards to how to handle intellectual property rights and copyright, the General Data Protection Regulation (GDPR) and the AI act from the EU. People are advised to have clear prompts from personal data when using GenAI tools. Most institutions in Sweden follow reference frameworks such as the DIGG's guidelines.

Support for Diverse Educational Needs and Equity: To promote fair treatment and equal opportunities, KTH recommends first and foremost that staff use tools that are supported by the institution. This is done by suggesting teachers to: 1) Only allow the use of GenAI for tasks where the versions produce similar results or do not have a major impact on the end result. 2) Specify which versions of GenAI tools are allowed to be used. 3) Give access to the paid version of a GenAI tool to everyone in the course. For example, all KTH students and researchers can now use Scopus AI, a tool that provides AI-generated summaries, concept maps, and in-depth reports from the Scopus database.

Triability

Integrating AI into Educational Practice: With 31 different programmes in the first and second cycle, the approach taken by KTH is for teachers to provide course-specific information about GenAI to the students for each course. It is up to the teachers of each course to specify both restrictions of GenAI use as well if such use needs to be disclosed. To help teachers create this information, four different templates were developed (further described below) by KTH e-learning, where each template represents a different approach. These templates are automatically included in each course room in Canvas

Critical Evaluation and Human-Centric Perspectives and Competencies: KTH highlights the importance of human review, suggesting that material created by GenAI should be checked and edited before publication, both for quality purposes and to meet certain legal requirements. For example, human involvement is required to comply with copyright and the AI act. This allows users to argue that the prompt and the response from the AI are drafts and therefore do not have to be saved according to the principle of public access to official documents.

Transparency and Privacy: To support teachers creating the course-specific information about GenAI, KTH e-learning has developed four different templates, which can be seen as four different levels of allowed GenAI use:

1. No use of GenAI tools allowed – Can be used when GenAI has a risk of negatively impacting the students' ability to meet the course's intended learning outcomes

2. GenAI tools only allowed in specific assignments – Can be used when a course has certain assignments where the use of GenAI would help the students reach the intended learning outcomes. If not specified, the use of GenAI is not allowed.
3. GenAI tools allowed according to given guidelines – Can be used when GenAI is allowed for certain things, but not for others. E.g. allowed for generating ideas and correcting grammar errors, but not to fully generate a full text for an essay.
4. Free use of GenAI tools – This could, for example, be courses where GenAI is the topic of the course.

Policy Communication: Information is found on the institution's intranet, under education and system support. Staff are recommended to be transparent and model expected behavior. Continuous discussions are suggested to combat over-reliance on AI tools and help students avoid common problems. A page with FAQs related to GenAI is constantly updated.

Assessment Design and Authentic Assessments: As assessment has become one of the biggest issues in this area, KTH faculty and students are discussing how to approach the necessary changes. One of the workshops offered triggered discussions and reflections on the effects of GenAI on examination, how to handle the risk of AI-related misleading during examinations, and how we can communicate about AI with our students.

Observability

Continuous Evaluation: The KTH E-learning team, consisting of DL (Digital learning), IT and the Support unit, constantly revises the different tools being used and their effectiveness. This often involves a number of stakeholders.

Collaboration and Discussion: The Faculty Council of KTH Royal Institute of Technology emphasizes the importance of university-wide exchange and learning as part of the systematic quality work. To strengthen the exchange of experience and continuous quality development of our educational programmes, the Storträffen meetup is arranged every semester for all staff and students. In the autumn, the main language of the Storträffen meetup is Swedish. On 1 December 2025 the main theme of the meeting was: Education with and without AI.

Ongoing Monitoring: As agile as possible, KTH tries to work on current issues involving different stakeholders. Between the big meetings that occur twice a year, working groups (known as PriU, dealing with prioritized issues) meet on a more regular basis to keep track of what is going on.

Aarhus University, Denmark

Aarhus University (AU) is a comprehensive university and the second largest university in Denmark. It has five faculties; each faculty has between three and fifteen departments. Engineering was quite recently included at the university.

Like many other Nordic universities, there is a large degree of freedom for the individual teacher/researcher in the way she uses GenAI in her teaching and assessment. Three years back, a working group with representatives from all five faculties was established and it came up with the first version of the rules for the use of GenAI in exams. The overall conclusion was “GenAI is forbidden unless it is clearly stated that it is allowed”. Less than a year later, this was changed to “GenAI is allowed unless it is stated that it is not allowed” (AU 2024). Since the first version of the rules, the student must declare the way they have used GenAI (AU 2026a).

Compatibility

Academic Integrity and Ethical Use of AI: Existing rules for grading and disciplinary cases also govern GenAI use. In all courses, the course-responsible teacher must specify restrictions on permitted aids during examinations. AI-generated material must be labeled and cited, and a declaration for the use of GenAI must be submitted with students' written work.

Enhancing Teaching and Learning: In the support materials for students and teachers, there is a focus on how to use GenAI to enhance learning. The declaration of the use of GenAI was done to make students reflect on their use and how it enhanced their learning.

Fostering AI Literacy and Skills for the Future: Three years ago, a university-wide initiative started with a focus on the "digital competent candidate". (AU 2022). Here, GenAI got a central focus. No central initiative has been taken for the inclusion of a specific GenAI course, but many study programmes include courses focusing on the responsible use of GenAI.

Information Security and Data Privacy: AU stresses that the use of GenAI might disclose sensitive information. It is highly recommended that students and teachers alike consider GDPR when prompting. AU has a data agreement with Microsoft (CoPilot), ensuring that all students and staff can use it securely.

Support for Diverse Educational Needs and Equity: There is no direct focus on this in the AU guidelines or policies. There have been discussions among teachers that students who can afford access to better GenAI tools will have an advantage.

Triability

Integrating AI into Educational Practice: AU has a central pedagogical unit (<https://ced.au.dk/en>). They have websites for students and teachers with case studies and advice for the use of GenAI. A university-wide course focusing on teachers' course redesign to include the use of GenAI (AU 2026b) was given. Several local and faculty arrangements have been made where ideas are shared.

Critical Evaluation and Human-Centric Perspectives and Competencies: There is a general focus on "AI for good". Many departments and study programmes have discussed how one can "keep the human in the loop"

Transparency and Privacy: The declaration required from students is a way to ensure a transparent use of GenAI. Teachers are instructed to cite correctly, which includes citing correctly when using GenAI.

Policy Communication: The policies are available on the intranet. It is communicated via the educational hierarchy; the study director discusses with the course representatives on how to include it, e.g. in the assessment.

Assessment Design and Authentic Assessments: There has been a requirement that all courses decide on the use of GenAI. The board of studies ensures that all course descriptions include information about the use in the exam.

Observability

Continuous Evaluation: The central pedagogical unit continuously evaluates GenAI tools. There is no structured collection of GenAI usage across the university.

Collaboration and Discussion: This is done in different fora: Many departments have devoted half or a full departmental day to discussing how to use GenAI, there have been workshops organized by the central pedagogical unit, etc.

Ongoing Monitoring: There is no formal structure for ongoing monitoring.

Jönköping University, Sweden

Academically, Jönköping University (JU) is organized into four schools (faculties) offering a wide range of bachelor's, master's, and doctoral programmes across business, engineering, computing, education, health sciences, and social sciences. This structure supports interdisciplinary collaboration, particularly in innovation, digitalization, and sustainability.

In recent years, JU has actively addressed the development and use of AI in both education and assessment. The university has established institution-wide guidance on the responsible use of AI tools, focusing on ethics, academic integrity, legal compliance, and transparency for both staff and students (JU 2025a). These guidelines clarify how AI may be used in learning activities, research, and examinations, and emphasize the examiner's responsibility in defining permitted tools and assessment formats. In parallel, AI-related education is embedded in several programmes, particularly in engineering and computing, and supported by initiatives such as the Jönköping AI Lab (JAIL) and courses on AI ethics and responsible design, reflecting JU's commitment to developing AI competence while safeguarding fair and valid assessment practices.

Compatibility

Academic Integrity and Ethical Use of AI: From an ethical use perspective, AI should support learning rather than replace human judgment. Academic Integrity and clear instructions in course guides about what constitute acceptable AI use.

Enhancing Teaching and Learning: In JU, AI should enhance, not diminish, teacher competence; it should empower knowledge. Students benefit from AI to enhance learning; however, students are encouraged to engage with AI tools responsibly, understanding their role as complementary rather than authoritative sources.

Fostering AI Literacy and Skills for the Future: For JU, it is important to use AI to innovate and continuously improve staff work in Education. JU launched structured workshops on AI literacy and assessment design.

Information Security and Data Privacy: JU stresses that staff and educators need to ensure that AI systems are reliable, fair, safe, and trustworthy, and that the management of educational data is secure and protects the privacy of individuals. Safe systems like Microsoft Copilot are integrated.

Support for Diverse Educational Needs and Equity: According to JU guidelines, employ AI tools to support fairness and inclusion in education, while avoiding bias or discrimination. Fairness and inclusion are key principles included.

Triability

Integrating AI into Educational Practice: In JU, the teacher must explain how and why AI tools are used in grading, providing feedback, or supporting learning materials.

Critical Evaluation and Human-Centric Perspectives and Competencies: Regarding a Human Centre perspective, students are expected to uphold academic integrity by ensuring that the work they submit is their own and to avoid over-reliance on AI for academic tasks. The use of AI tools is encouraged as a tool; however, it should be supervised by a human (JU 2025b).

Transparency and Privacy: The declaration states that students are expected to be transparent about how AI affects their learning and assessment.

Policy Communication: The policies are available on the intranet and updated regularly.

Assessment Design and Authentic Assessments: There has been a requirement that all courses decide on the use of GenAI. For students, the policy emphasizes responsible use, avoiding plagiarism and cheating, and understanding that generated text may still count as misconduct if misused (SVT 2024; JU 2025a).

Observability

Continuous Evaluation: JU, through EDUCATE (JU 2025b), offers workshops and guidelines to integrate AI responsibly, demonstrating institutional commitment.

Collaboration and Discussion: Students, teachers, and supervisors are encouraged to discuss, share, and participate in various events related to AI.

Ongoing Monitoring: Continuous monitoring, updating and innovating, including the new platform (JU AI network) to foster interdisciplinary collaboration and policy.

CONCLUSIONS

This paper examined institutional rules and guidelines for GenAI at six Nordic CDIO institutions, using Diffusion of Innovations Theory as an analytical lens. Despite differences in organizational structures and governance traditions, these institutions share an aligned understanding of the challenges and opportunities posed by GenAI in HE. GenAI is considered a transformative technology that requires pedagogical, ethical, and organizational responses.

From a compatibility perspective, the findings show a consistent emphasis on academic integrity, transparency, and data protection. Across all cases, GenAI use is anchored in existing academic norms and regulatory frameworks, reinforcing the principle that responsibility and accountability remain with students and staff.

Regarding trialability, there is a tendency toward contextual and pedagogically grounded implementations. Traffic light models, course-specific guidelines, templates, and declarations of use exemplify mechanisms that allow experimentation while maintaining clarity and fairness. This flexibility enables teachers to integrate GenAI in ways that are appropriate to disciplinary practices and assessment goals. From a CDIO perspective, these mechanisms are particularly relevant to Standard 9 (Enhancement of Faculty CDIO Skills). Rather than treating GenAI as an external disruption, institutions invest in developing teachers' competencies to design learning activities, assessments, and guidance that meaningfully integrate AI.

In terms of observability, the results are more heterogeneous. While all institutions acknowledge the need for continuous evaluation, dialogue, and policy updates, the level of

formalization seems to vary. Some institutions have established structured mechanisms for monitoring developments, whereas others rely more on ad hoc discussions and local initiatives. This dimension connects closely to CDIO Standard 11 (Learning Assessment). GenAI challenges traditional assessment practices by blurring boundaries between individual and assisted work, thereby increasing the importance of transparent assessment criteria, authentic tasks, and reflective documentation of learning processes.

Overall, the findings suggest that Nordic HE institutions are moving toward pragmatic and adaptive governance models for GenAI. Rather than attempting to fully control or prohibit its use, institutions focus on setting clear boundaries, supporting informed experimentation, and strengthening faculty competence and assessment practices. From a CDIO standpoint, this approach reinforces the interconnected nature of curriculum, pedagogy, faculty development, and assessment. GenAI thus becomes not only a policy challenge but also a catalyst for advancing CDIO-aligned practices that emphasize authentic learning, professional skills, and continuous improvement.

ACKNOWLEDGEMENTS

The authors received no financial support for this work

REFERENCES

- An, Y., Yu, J., & James, S. (2025). Investigating the higher education institutions' guidelines and policies regarding the use of generative AI in teaching, learning, research, and administration. *International Journal of Educational Technology in Higher Education*, 22(10). doi:<https://doi.org/10.1186/s41239-025-00507-3>
- ARENE. (2024a). Arene's recommendations on the use of artificial intelligence for universities of applied sciences. Retrieved from <https://arene.fi/julkaisut/arenen-suositukset-tekoalyn-hyodyntamisesta-ammattikorkeakouluille/>
- ARENE. (2024b). The use of AI in learning tasks – Traffic Light Model. Retrieved from <https://arene.fi/julkaisut/arenen-suositukset-tekoalyn-hyodyntamisesta-ammattikorkeakouluille/>
- AU (2022). Digitalt kompetente kandidater (in Danish). <https://pure.au.dk/portal/da/projects/digitalt-kompetente-kandidater/>
- AU (2024). Indstilling fra arbejdsgruppe om anvendelse af GAI på AU (in Danish). https://ced.au.dk/fileadmin/ced.au.dk/Online_dokumenter/Indstilling_fra_arbejdsgruppe_om_anvendelse_af_GAI_paa_AU_23.01.2024.pdf
- AU (2026). Generative artificial intelligence (GAI). <https://studerende.au.dk/en/gai>
- AU (2026b). Generative AI in University Teaching. <https://ced.au.dk/en/courses/generative-ai-in-university-teaching>
- DIGG (2026). The Nordic AI trust model. <https://www.digg.se/en/management-and-coordination/nordic-digigov-lab/the-nordic-ai-trust-model>
- Jin, Y., Yan, L., Echeverria, V., Gašević, D., & Martinez-Maldonado, R. (2025). Generative AI in higher education: A global perspective of institutional adoption policies and guidelines. *Computers and Education: Artificial Intelligence*. doi:<https://doi.org/10.1016/j.caeai.2024.100348>
- JU (2025a). Artificial intelligence. <https://ju.se/portal/educate/en/guides/artificial-intelligence.html>
- JU (2025b). Exploring the pedagogical uses of AI. <https://ju.se/portal/educate/en/guides/artificial-intelligence/exploring-the-pedagogical-uses-of-ai.html>
- Luo, J. (2024). A Critical Review of GenAI Policies in Higher Education Assessment: A Call to Reconsider the 'Originality' of Students' Work. *Assessment & Evaluation in Higher Education*, 49 (5), 651-664.

LUT Universities (2025). AI-based tools policies. Retrieved from <https://elut.lut.fi/en/completing-studies/rules-and-regulations/ai-based-tools-policies>

McDonald, V., Johri, A., Ali, A., & Hingle Collier, A. (2025). Generative artificial intelligence in higher education: Evidence from an analysis of institutional policies and guidelines. *Computers in Human Behavior: Artificial Humans*, 3. <https://doi.org/10.1016/j.chbah.2025.100121>

OECD (2023). Guidance for generative AI in education and research. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000386693>. Paris: OECD Publishing.

Rogers, E. M., Singhal, A., & Quinlan, M. M. (2019). Diffusion of innovations. In D. W. Stacks, M. B. Salwen, & E. K. C., *An integrated approach to communication theory and research* (pp. 415-433). New York: Routledge.

Sabzalieva, E., & Valentini, A. (2023). ChatGPT and Artificial Intelligence in higher education: Quick start guide. Retrieved December 19, 2025, from <https://unesdoc.unesco.org/ark:/48223/pf0000385146/PDF/385146eng.pdf.multi>

Spivakovsky, O. V., Omelchuk, S. A., Kobets, V. V., Valko, N. V., & Malchykova, D. S. (2023). Institutional Policies on Artificial Intelligence in University Learning, Teaching and Research. *Information Technologies and Learning Tools*, 97(3), 181-202.

SVT (2024). Trots fusk – Högskolan i Jönköping vill uppmuntra AI (in Swedish). <https://www.svt.se/nyheter/lokalt/jonkoping/trots-fusk-hogskolan-i-jonkoping-vill-uppmuntra-ai>

TIAGA (2026). TAIGA – Centre for Transdisciplinary AI. <https://www.umu.se/en/centre-for-transdisciplinary-ai/non-dequity-orientediscrimination/>

UMEAA (n.d. a) All you want to know about AI! <https://www.umu.se/en/research/features-and-news/artificial-intelligence/fraiday/>

UMEAA (n.d. b). AI Policy Lab. <https://aipolicylab.se/>

UMEAA (n.d. c). Artificial Intelligence at Umeå University. <https://umuais.cs.umu.se/artificial-intelligence-at-umea-university/>

UMEAA (2023). Digitaliseringsstrategi vid Umeå Universitet (in Swedish). <https://www.umu.se/regelverk/lokaler-it-miljo-och-sakerhet/digitaliseringsstrategi-vid-umea-universitet/>

UMEAA (2024a). Introduction to AI in education, 7.5 credits. <https://www.umu.se/en/student/syllabus/2it041/>

UNEAA (2024b). Apply for an UTRI event. <https://www.umu.se/en/umea-transformation-research-initiative/apply-for-activity-funding/>

UMEAA (2024c) Using No-Code AI to Teach Machine Learning in Higher Education. <https://www.umu.se/en/research/projects/using-no-code-ai-to-teach-machine-learning-in-higher-education/>

UMEAA (2025a). From Artificial Intelligence to Pedagogical Innovation. <https://www.umu.se/en/research/projects/from-artificial-intelligence-to-pedagogical-innovation/>

UMEAA. (2025b). Cheating and plagiarism. <https://www.umu.se/en/student/help-and-support/your-rights-and-responsibilities/cheating-and-plagiarism/>

UMEAA (2025c). Critical, Ethical, Legal and Social AI, (CELS-AI). <https://www.umu.se/en/centre-for-transdisciplinary-ai/research/critical-ethical-legal-and-social-ai/>

UMEAA (2026a). Digital Dilemmas: Feminist Perspectives on Artificial Intelligence. <https://www.umu.se/en/education/courses/digital-dilemmas-feminist-perspectives-on-artificial-intelligence-2in951/>

UMEAA (2026b). Utvecklade examinationsformer (in Swedish). <https://www.umu.se/upl/hogskolepedagogiska-projekt/utvecklade-examinationsformer/>

UNESCO (2023). Guidance for Generative AI in Education and Research. Retrieved February 16, 2026, from <https://unesdoc.unesco.org/ark:/48223/pf0000386693>

UNESCO (2024a). AI Competence framework for students. Retrieved from <https://doi.org/10.54675/JKJB9835>

BIOGRAPHICAL INFORMATION

Dr **Jens Bennedsen** is a Doctor of Philosophy and a Professor in engineering didactics. He received an MSc degree in Computer Science from Aarhus University in 1988 and a Doctor Philosophiae degree in Computer Science from Oslo University in 2007. His research area includes educational methods, technology and curriculum development methodology. He has published more than 80 articles at leading education conferences and journals. He is a member of the CDIO Council.

Juha Kontio is Vice Rector for Education at Turku University of Applied Sciences. He holds a Doctor of Science in Economics and Business Administration and earned his M.Sc. in Computer Science from the University of Jyväskylä in 1991. In 2004, he completed his D.Sc. in Information Systems at Turku School of Economics. His research interests center on higher education development, curriculum design, and educational innovation. Juha has extensive experience in advancing engineering education and promoting international collaboration. He currently serves as Co-Director of the global CDIO Initiative and is a former Co-Leader of the European CDIO region.

Janne Roslöf serves as the Dean of the Faculty of Technology at LAB University of Applied Sciences, Finland. He holds a D.Sc. and an M.Sc. in Process Systems Engineering from Åbo Akademi University (ÅAU) (Finland) and an M.A. in Education Science from the University of Turku (Finland). Also, he is an Adjunct Professor of Software Engineering Education at the Faculty of Science and Engineering of ÅAU. His research interests include project-based learning environments, first-year engineering student experience as well as topics connected to student-flow in higher engineering education.

Elizabeth Keller works at the Department of Learning in Engineering Sciences at KTH, in the Unit for Learning in STEM. She also collaborates with the Digital Learning Unit on matters related to continuous learning. Within the CDIO community she has worked with global competence, curriculum agility, and more recently faculty development. She currently teaches a pedagogical course for doctoral students and is involved in different projects. Her interests include educational innovation, young faculty development and transversal competencies in engineering education.

Fredrik Georgsson (Ph.D., Computer Science, Umeå University, 2001) is an analyst–scholar whose work bridges research quality, data-driven governance, and computing. His research spans medical image processing, optics, artificial intelligence, mathematics, analytical chemistry, engineering education, and quality assurance in higher education. He served on SEFI's Board (2016–2022) and contributed to the CDIO framework (European Regional Co-Director). Nationally, he contributes as an expert and advisor in evaluation and official statistics.

Marisol Rico Cortez is an Assistant Professor in the Department of Product Development, Production, and Design. Her research focuses on the design and development of products based on the principles of the integral model for new product design. She holds an MSc degree in Manufacturing Engineering and a ScD degree in Mechanical Engineering. She has more than 15 years' experience in product development, production and design from the Industry in Mexico and education in Sweden and Mexico. Her research and development

interests are focused on Integral Product development in the Energy and Health sectors, and the integration between Research, Academy and Industry. Marisol is the CDIO representative for the School of Engineering at Jönköping University.

Corresponding author

Jens Bennedsen
Department of Electrical
and Computer Engineering
Aarhus University
Helsingforsgade 10
DK-8200 Aarhus N
Denmark
jbb@ece.au.dk



This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.