IMPLEMENTING AI TRAFFIC LIGHTS FOR TEACHING AND LEARNING – CASE TURKU UAS

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One of the greatest challenges and opportunities for higher education is the development of Artificial Intelligence. It affects higher education institutes at the organizational level, impacts the work of teachers and challenges students' learning process and activities. The Rectors Council of Universities of Applied Sciences in Finland recognized the importance of structured approach to integrate AI in higher education institutes to ensure responsible and effective use of AI. As a result of a working group, the Council published recommendations for AI utilization at organizational, teacher, and student levels. The objective of the recommendation was to provide guidelines that promote ethical, transparent, and competent use of AI, enhancing educational and professional competencies. The recommendations are categorized into three main areas: organizational level, teachers' role, and students' role. Each category addresses specific aspects of AI use, including ethical principles, responsibility, data protection, and competence.

At the organizational level, the recommendations emphasize the importance of ensuring staff and students can use AI responsibly, promoting fairness, equality, and respect, using AI to enhance learning and working life skills, safeguarding privacy and data protection, providing training on AI tools, and making AI operations and decisions clear. For teachers, the focus is on understanding how AI can support teaching and learning, using AI to promote student development, maintaining fairness and respect, following data protection practices, and being aware of AI limitations. For students, the recommendations highlight the need to recognize AI's potential in studies, develop AI literacy and critically assess AI outputs, understand AI limitations, and follow ethical guidelines. The recommendations aim to ensure responsible and effective use of AI in universities of applied sciences, enhancing both educational and professional competencies. An essential part of the recommendations is the AI traffic lights that describe the use of AI in learning tasks.

At Turku University of Applied Sciences, a process to promote and implement the recommendations was started in early 2025. The aim is that the AI traffic lights will be in use on all programs and courses from the beginning of 2026. In this paper, the recommendations and their implications are presented and discussed along with our own process and experiences.

Keywords: *Artificial Intelligence, Recommendations, AI strategies, AI Traffic lights*

Introduction

One of the greatest challenges and opportunities for higher education is the development of Artificial Intelligence. It affects higher education institutes at the organizational level, impacts the work of teachers and challenges students' learning process and activities. There are several aspects to consider like OECD (2025b) report describes: *First, there is a focus on how to use AI to improve teaching, learning and assessment. Second, a related focus is on identifying and preventing risks of AI usage, such as AI bias, data protection and students using AI to cheat on tests. Third, there is increasing emphasis on adapting curricula to incorporate AI literacy – this is, educating about how AI works and how to use it. These are obviously important questions. However, they also overlook some significant social implications of AI's transformative potential and its subsequent effects on education. In particular, the fact that if AI and robots were to significantly reshape how humans carry out work and life tasks, the knowledge, skills, and attitudes promoted through education might need to change.* The World Economic Forum discussed in 2024 that almost 40 percent of global employment is exposed to AI, with advanced economies at greater risk but also better poised to exploit AI benefits than emerging market and developing economies (Cazzaniga, 2024). These changes further challenge teaching and learning and there is truly a need for all citizens to be AI literate to benefit from AI. Consequently, there are several concerns about the use of AI in teaching and learning such as the originality of student's work for assessment and grading (Luo, 2024).

OECD's "Trends Shaping Education 2025" report encourages policymakers and educators to use futures thinking to anticipate how AI and other technologies might disrupt or enhance education. (OECD, 2025a)

There's a strong focus on preparing students for a world where AI is ubiquitous including fostering digital literacy, critical thinking, and ethical reasoning. UNESCO has published AI competence frameworks for students and teachers(UNESCO, 2024a, 2024b). Furthermore, UNESCO calls for national AI strategies to include higher education explicitly and stresses the need to train university faculty and researchers in GenAI use, including prompt engineering, ethical considerations, and pedagogical integration (UNESCO, 2023). Actually, the precondition for the responsible use of AI in education is the enforcement of regulations to ensure the trustworthiness of AI tools and to safeguard learners and teachers (UNESCO, 2024b). In the next section, we look at a number of countries and their policies related to AI in higher education. After that the paper focuses on the framework and recommendations on AI from the Rectors' Council of Universities of Applied Sciences in Finland before moving to the case study of Turku UAS and discussion and conclusions.

AI strategies in education

This section looks at some potential countries and their AI policy and recommendations. The focus on the review is on the connection with higher education and teaching and learning. There are six short reviews from UK, France, Germany, Singapore, Japan, Australia, Finland and European Union.

The UK Government's AI Opportunities Action Plan outlines an ambitious vision for harnessing artificial intelligence across society – with higher education playing a central role. The plan includes clear recommendations that could inspire similar initiatives in other countries. The UK aims to train tens of thousands of new AI professionals by 2030. This requires the creation of new degree programs, close collaboration with industry, and the integration of AI into non-technical fields such as healthcare and public administration. The UK plans to establish AI Research Resource (AIRR) clusters that combine cutting-edge research, computing power, and data resources. Universities are encouraged to embrace open data practices and collaborate with government and industry to accelerate innovation. To summarize, AI is not just a technological shift – it's a pedagogical and societal transformation. The UK's strategy offers concrete steps that higher education institutions worldwide can adapt to prepare for an AI-driven future. (Department for Science, 2025)

Singapore has National AI Strategy 2.0 that outlines a forward-thinking framework that highlights the role of artificial intelligence in transforming education. The strategy provides a clear direction for higher education institutions to adopt AI in a responsible and impactful way. 1. Curriculum Transformation: AI literacy and technical skills are being integrated across various disciplines. The goal is to ensure that students from all fields understand the fundamentals and applications of AI. 2. Upskilling Educators and Students: The strategy supports training educators to effectively use AI in teaching, while also preparing students for a future where AI skills are essential in the workforce. 3. Research and Innovation: Universities serve as key hubs for AI research. They participate in national and international projects that develop AI solutions for sectors like healthcare and sustainability. 4. Ethics and Responsibility: Higher education institutions are involved in shaping ethical and legal frameworks for AI. The aim is to ensure that AI is used safely and in ways that are socially acceptable.

As part of the France 2030 initiative, the strategy "Make France an AI Powerhouse" places higher education at the heart of national efforts to advance artificial intelligence. The government outlines several targeted actions to strengthen universities' role in AI development such as Expanding AI education across all levels, Funding new academic programs via the Skills and Future Professions initiative, enabling institutions to design curricula aligned with emerging AI competencies and Providing access to advanced computing infrastructure for universities, enabling hands-on, research-driven AI education. (Gouvernement de la République Française, 2025)

Germany's AI strategy includes a dedicated initiative for higher education, focusing on digital transformation, AI literacy, and intelligent learning environments. The "AI Campus" platform provides open educational resources for students and educators. Universities are supported in developing AI-based teaching tools and research projects. The Federal Government and the Länder intend to jointly anchor AI across the German higher education system. Funded projects are aimed at making better use of AI in teaching and equipping the professionals of tomorrow with relevant skills and competences. A total of 81 universities have received funding under the umbrella of the initiative. The goal is to enhance educational quality and equip students with future-relevant skills. (Bundesministerium für Bildung und Forschung, 2023; Bundesministerium für Forsnung, 2025)

Japan's Ministry of Education (MEXT) has issued guidelines for the ethical and pedagogical use of generative AI in higher education. Universities are encouraged to develop institutional policies for AI use in teaching and research. The strategy also supports AI R&D and the development of domain-specific foundation models.(Ministry of Education, 2024)

Australia's AI framework, originally designed for schools, has been extended to include higher education. The 2024 review emphasizes responsible use, data privacy, and teacher support. Universities are encouraged to adopt AI tools that enhance learning while safeguarding student rights and academic integrity. (Department of Education Australian Government, 2025)

The EU Data Act, which entered into force in January 2024 and becomes applicable in September 2025, is a cornerstone of Europe's digital strategy. While it is not sector-specific, it has important implications for higher education institutions, especially in terms of data access, sharing, and governance. There's also a growing need for data literacy among staff and students. Universities must ensure that staff and students are trained to comply with the Data Act's provisions, especially when handling

shared or sensitive data. This may involve workshops, online modules, or new course offerings focused on data rights and responsibilities. (European Commission, 2024b). The European Commission has published ethical guidelines on AI and data usage in teaching and learning are designed to help educators understand the potential that the applications of AI and data usage can have in education and to raise awareness of the possible risks (Commission, Directorate-General for Education, & Culture, 2022). The follow-up regulation is The EU Artificial Intelligence Act (AI Act) is the first comprehensive legal framework for AI regulation globally (European commission, 2024a). For universities and research institutions, the Act introduces both challenges and opportunities. It classifies AI systems on different risk levels, and it prompts universities to address the ethical use of AI by students, especially in learning and assessment. Institutions are encouraged to establish governance frameworks and promote AI literacy to ensure responsible adoption.

In Finland, the integration of artificial intelligence into higher education is guided by a combination of ethical, pedagogical, and strategic principles. The Finnish National Agency for Education emphasizes AI literacy for both students and educators, advocating for its responsible use in teaching, assessment, and learning personalization. Institutions are encouraged to develop clear policies and ensure equitable access to AI tools, while educators are supported in building competencies through professional development. Complementing this, the Ministry of Education and Culture promotes interdisciplinary AI research, alignment with EU regulations, and the use of AI to enhance accessibility and innovation across all fields of study. Together, these recommendations aim to position Finnish higher education as both ethically grounded and technologically forward-looking. (Ministry of Education and Culture, 2024)

AI guidelines of Finnish Universities of Applied Sciences

The Rectors Council of Universities of Applied Sciences in Finland recognized the importance of structured approach to integrate AI in higher education institutes to ensure responsible and effective use of AI. As a result of a working group, the Council published recommendations for AI utilization at organizational, teacher, and student levels. Each university of applied sciences will prepare their own guidelines and procedures independently. The objective of the recommendation was to provide guidelines that promote ethical, transparent, and competent use of AI, enhancing educational and professional competencies. The recommendations operate at two different levels(ARENE, 2023):

- the organisational level: universities of applied sciences are encouraged to ensure the capability of the staff and students to use artificial intelligence responsibly
- the level of teaching: teachers are encouraged to ensure that AI is used in accordance with its purpose and in an ethical manner.

At the organizational level, universities of applied sciences are urged to proactively enable the responsible use of artificial intelligence (AI) across their communities. This involves providing access to AI tools and clear instructions for their use, ensuring that both staff and students are equipped with the necessary competencies through training and guidance. Ethical principles such as fairness, equality, and respect must underpin all AI-related activities, and institutions must safeguard data protection and privacy. Universities are encouraged to promote transparency by sharing information about AI capabilities and limitations, and to monitor usage through feedback mechanisms. Furthermore, they should continuously assess and update their ethical and operational guidelines in response to technological developments and actively participate in national discussions and initiatives to shape responsible AI practices. By fostering a culture of informed and ethical AI use, universities can support learning, enhance working life skills, and contribute to the broader societal discourse on artificial intelligence.

At the level of teaching, Teachers are encouraged to integrate AI thoughtfully into their teaching practices, ensuring that its use enhances learning rather than replaces critical thinking or pedagogical engagement. They should familiarize themselves with available AI tools and understand their limitations, biases, and ethical implications. Teachers are expected to guide students in responsible AI use, model ethical behavior, and foster discussions around digital literacy and data privacy. Continuous professional development is essential to keep pace with evolving technologies, and collaboration with colleagues is recommended to share best practices and develop consistent approaches across disciplines. Students, on the other hand, are advised to use AI tools as supportive resources in their learning journey, not as shortcuts or substitutes for original thinking. They should be aware of the ethical boundaries, including issues of plagiarism, data privacy, and the reliability of AI-generated content. Students are expected to follow institutional guidelines, seek clarification when unsure about appropriate use, and develop critical skills to evaluate AI outputs. By engaging responsibly with AI, students can enhance their learning outcomes and prepare for future professional environments where AI is increasingly prevalent.

As a very concrete tool for universities of applied sciences the recommendations provide a enlarged traffic light model to be used in learning tasks (ARENE, 2024). The basic idea is to communicate it clearly when and how use of AI tools relates to the course assignments.

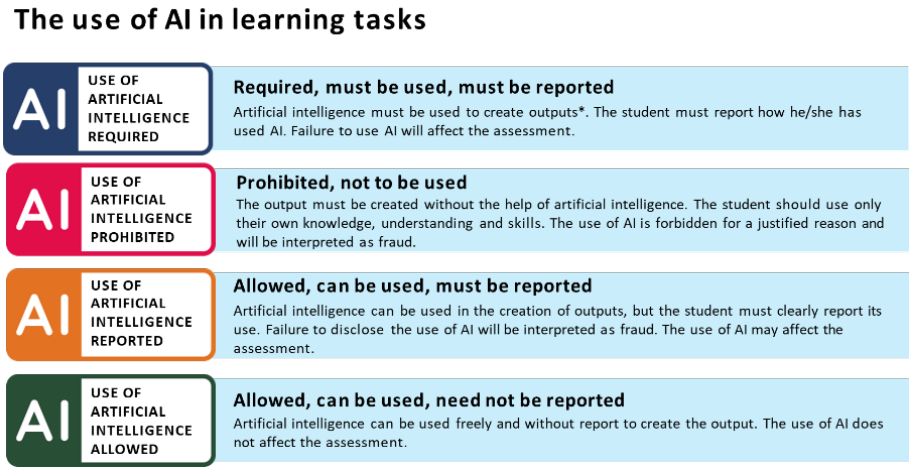

Figure 1. Traffic light model.

The Table 1 below summarizes the different levels and their key characteristics. The blue category is particularly useful for piloting new AI tools or approaches in teaching and learning, where the boundaries are still evolving and thoughtful experimentation is encouraged.

Traffic Light	Key Elements
USE OF ARTIFICIAL INTELLIGENCE REQUIRED	Artificial intelligence must be used to create outputs. The student must report how he/she has used AI. Failure to use AI will affect the assessment.
USE OF ARTIFICIAL INTELLIGENCE PROHIBITED	The output must be created without the help of artificial intelligence. The student should use only their own knowledge, understanding and skills. The use of AI is forbidden for a justified reason and will be interpreted as fraud.
USE OF ARTIFICIAL INTELLIGENCE REPORTED	Artificial intelligence can be used in the creation of outputs, but the student must clearly report its use. Failure to disclose the use of AI will be interpreted as fraud. The use of AI may affect the assessment.
USE OF ARTIFICIAL INTELLIGENCE ALLOWED	Artificial intelligence can be used freely and without report to create the output. The use of AI does not affect the assessment.

Table 1. Key elements of the traffic lights.

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At Turku University of Applied Sciences, a process to promote and implement the ARENE's recommendations was started in early 2025. The aim is that the AI traffic lights will be in use on all programs and courses from the beginning of 2026. The implementation of the traffic lights model is part of overall process of promoting and activating the use of AI in teaching and learning and strengthening AI literacy for all personnel and students. There was a pilot course testing the traffic lights early 2025 and in the feedback 54% of the course students said that the use of traffic lights clarified the usage of AI tools.

The enablement of the traffic lights requires updating of guidelines and tools for both teachers and students. We have updated our intranet regarding use of AI in teaching and learning, we have added element in our learning management systems (ItsLearning) and we have provided information on the process and schedules. At the same time a working group identified possibilities of AI to support and make things easier for teachers. These plans are not introduced on this paper, but they are partly covered on the workshops described below.

The implementation of the traffic lights requires guidance and support at the faculties, schools and teams. Basic process is that in each implementation plan of courses the connection with AI will be explained. Furthermore, in course assignments the corresponding traffic light will be presented. At the beginning of the course the implementation plan of the course will be introduced together with the AI guidelines. To support the smooth implementation, we will organize workshops the learn and discuss AI topics. The goal of these workshops is to

- To develop teachers' AI literacy and understanding of the possibilities of AI, especially as a streamlining of teaching and supporting the teacher team.
- To offer tips and examples of the possibilities of artificial intelligence in lightening the teacher's work and to activate individual and team reflections

The workshops will focus on the following themes:

- Artificial intelligence to support teaching and learning
- Using AI in Learning Assignments
- Artificial intelligence to support assessment.

Furthermore, we will discuss AI bots as co-teachers and teachers' teammates, creating summaries and notes with AI tools, and promoting accessibility and clarifying assignments. The workshops will focus on using Microsoft Copilot as our staff and students have access to enterprise-grade security.

The implementation of traffic lights on all our courses is a huge effort. We will collect feedback both from students and teachers in late spring 2026 and based on that modify our guidelines and procedures and continue the development.

Discussion

Artificial intelligence has already affected and will have effects on higher education in the future too. It is not a question that we can bypass rather is actively present and our task is to live with the AI revolution. The key question is not how the block AI tools and how to limit usage of AI. The key question is how we maintain our education meaningfull and relevant. With the introduction of traffic lights we try to have better control on the learning process. We define how and when AI is used, we balance the use of AI with other learning activities. Maybe we actually are bying some time for ourselves as changing curricula and courses does not happen overnight rather, they are processes that require time. However, that is something that higher education needs to do. Take some time and rethink their education. The Unesco's competence frameworks for teachers and students suggest that we need careful considerations on the role of teaching and learning. The same framework for teachers is intended to support the development of AI

Aspects	Progression		
	Acquire	Deepen	Create
1. Human-centred mindset	Human agency	Human accountability	Social responsibility
2. Ethics of AI	Ethical principles	Safe and responsible use	Co-creating ethical rules
3. AI foundations and applications	Basic AI techniques and applications	Application skills	Creating with AI
4. AI pedagogy	AI-assisted teaching	AI–pedagogy integration	AI-enhanced pedagogical transformation
5. AI for professional development	AI enabling lifelong professional learning	AI to enhance organizational learning	AI to support professional transformation

Figure 2. The AI competency framework high-level structure: aspects and progression levels.

competencies among teachers to empower them to use these technological tools in their teaching practices in a safe, effective and ethical manner. It provides tools for higher education institutes to reflect their staff competences using the competence framework shown in the figure 2. This is also something that we in Turku intend to introduce and reflect on in the future.

The implementation of the traffic lights is much more than just adding them to the course descriptions and course implementation plans. They initiate questions that make the teacher really reflect the course and the way course is implemented. There are questions such as

- What things in the learning process can be implemented or produced with the help of artificial intelligence?
- How should assignments and assessment methods be modified so that the use of artificial intelligence is possible, but not the only way to demonstrate competence?
- What things do students need to know without aids?
- How will the development of basic professional skills be ensured?
- How can you utilise artificial intelligence in the planning or implementation of course content, materials or learning assignments?

Conclusions

This paper provided a review of different policies on AI and higher education. It showed that there are generic challenges that are considered all over the world. Interestingly it also showed that you can see some national flavors in the policies. The presented Finnish UAS approach provided a very simple and clear way on looking AI in course level. It brings AI to spotlight of every teacher and student in higher education. The process is in progress and we could not provide concrete results and implications at this point. However, we have already seen that the implementation of traffic lights and implementation process itselt supports the build-up of AI literacy competences. Furthermore, we recognize that the UNESCO competences framework could offer additional tools for higher education institutes.

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