ETHTECH

Ethics of AI and Data in Education

The Situated ETH-TECH Perspective: a Framework for Practice

Project Deliverable – Work Package II «ETH-TECH Framework»

The Project

& Partnership

Anchoring Ethical Technology (AI and Data) Usage in the Educational practice (ETH-TECH)

The ETH-TECH project aims to promote an ethical approach to the use of technologies, especially data and artificial intelligence (AI), in higher education (HE) teaching and learning. It is grounded on European Union initiatives, such as the ethical guidelines on the use of AI and data in education published in 2022, which encouraged educators to reflect on the consequences of the digital transformation.

ETH-TECH channels the complex **professional expertise of university educators and researchers from 4 EU countries**, to provide a **culturally sensitive** and **contextualized** framework for the ethical use of AI in HE.

This project deliverable is the result of joint collaboration between all partners.
Final document authored by BBU and UNIPD teams (Work Package Leaders).

Let's make a start!

Understanding the ETH-TECH objectives and activities will help us understand the value of the present framework

ETH-TECH objectives

- To raise awareness among future educators about ETH-TECH perspectives in HE courses.
- To develop a set of practical tools for self-assessment of the effective integration of an ETH-TECH approach in HE, based on EU guidelines.
- To support the development of an ETH-TECH approach through a set of OER.
- To foster creative engagement of key stakeholders towards the ETH-TECH.

ETH-TECH activities

- Awareness-raising sessions, after the participatory analysis of syllabi and teaching practices on AI ethics and data use in education.
- Creation of a self-assessment framework and tools to promote dialogue on current gaps and future challenges of the ETH-TECH approach.
- Development of Open Educational Resources and a 25-hour course (1 ECTS) to facilitate the ETH-TECH approach in institutions.
- Organization of Educathon events to validate the ETH-TECH approach and resources with NGOs, SMEs, and civil society.

The aim of this framework is to provide support to future educators (and teachers and educators' trainers) to reflect about the ethics of AI and data in education*. ETH-TECH critically integrates the 7 principles on the use of AI and data in education proposed by the European Commission in 2022. Moreover, we consider the recent developments related to the AI Act (European Commission, 2024) for Higher Education.

Table 1. Synthetic presentation of the 7 principles on the use of AI and data in education (European Commission, 2022)

Principle	Short explanation and key guiding question
Human Agency and Oversight	AI can help teaching and learning goals and collaborative work with colleagues. It is key that educators have control and oversight of the AI-supported products being developed. **Who controls and monitors the AI you use for education?**
Transparency	AI systems need to clearly explain how they function and what data they process. **Do you know how the AI you use for education works?**
Diversity, non-Discrimination and Fairness	AI systems should be designed to accommodate the diversity and needs of all teachers and students, who should be able to use these systems equally. **Could the AI system lead to discrimination or unfairness towards some users?**
Societal and Environmental Wellbeing	The increasing use of AI tools for educational activities should not have a negative impact on broader ethical concerns, such as toxic dependence, lack of academic integrity or environmental impact. **How does the AI you use for education make you feel?**
Privacy and Data Governance	In the "datafied" society user interactions with AI systems are recorded and potentially monetized. It is important to understand how personal data is collected, stored, and used by AI systems. **How is your data collected when you use AI for education and how is it used? Who has access to this data?**
Technical Robustness and Safety	Many AI systems operate as "black boxes," which means that their algorithms work in unclear ways, or the interfaces do not explain how data is handled. You depend on systems you don't fully understand, which can undermine trust and pedagogical alignment. **Is your interaction with AI for education secure and you can trace each step of the interaction?**
Accountability	Teachers and universities need to understand and monitor how Ed-Tech enhanced by AI works, to be in contact with their developers for troubleshooting, and to tackle potential problems. **Who can you contact when something goes wrong with your using AI for education?**

Take your time...

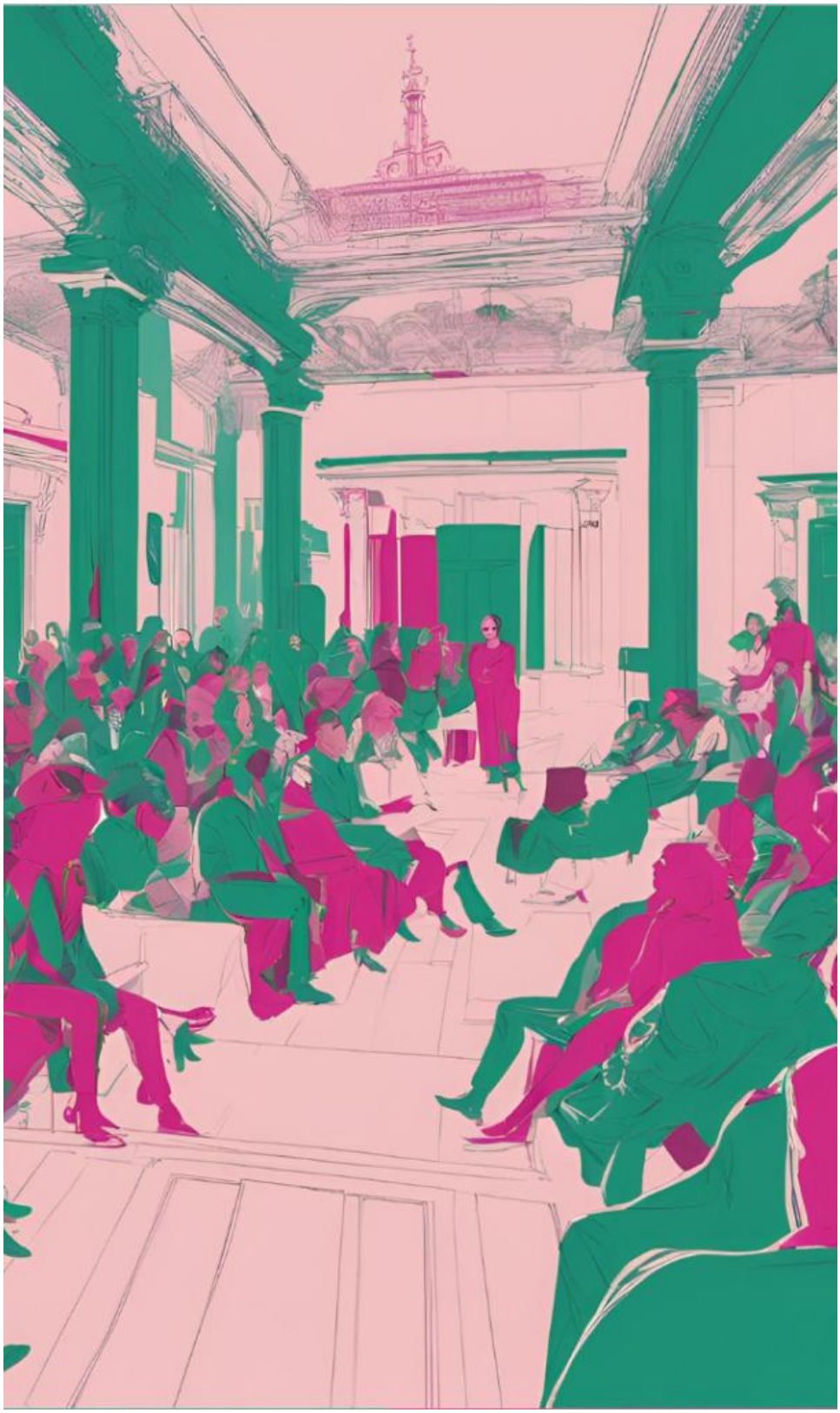
And explore the several principles. Use the questions in the table to think about the AI-powered systems in use in the institution where you take part as a teacher or a student.

During an initial analysis carried out over more than 300 syllabi across four member states (Germany, Italy, Romania, Spain) we found a troubled picture of how the Ethics of AI and data is taught to future educators. Read more HERE.

Certainly, these principles are very abstract and non-contextual.

The ETH-TECH framework recommends to critically integrate EU regulations on ethical use of AI.

Here, you will see several things to reflect upon before considering the ethical principles.



Analyse the role of culture

Each local context has a **dominant cultural orientation** (for example, collectivism versus individualism), which is reflected on how legislators, institutions, and educators approach AI for education.

These cultural orientations place **more or less responsibility on the individual** (administrator, teacher, student) or the legislators (national or local administrative institutions) to define, enforce, and support ethical AI use in education.

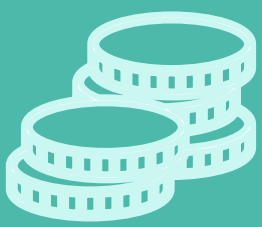
The trust that people have in the system is the first line of analysis that needs to be considered.

Guiding reflection questions

Who regulates the ethical use of AI in education in your country?

How much flexibility does your university have in enforcing ethical use of AI in education?

Do you feel protected yet responsible when you experience a breach in ethical use of AI in education in your practice?



Consider the national and local socio-economic dynamic

Local (embedded in national) contexts may have **more or less resources** in educating HE institutions about the ethical use of AI in education.

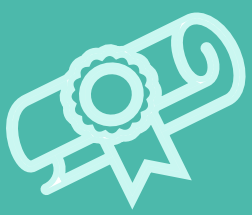
This creates inequalities at national and regional level and requires a tailored approach of what is possible to be implemented in terms of procedural regulations and training of teachers.

Guiding reflection questions

Who provides resources (information, training, assistance for critical problems) for ethical use of AI in your regions?

Is the ethical use of AI for education legally regulated and are there resources to ensure the implementation of these regulations?

Do teachers and students have the socio-economic resources (time, education about how AI works, tools and skills for critical reflection) to ensure ethical use of AI in their educational practice?



Understand the structure of the specific educational system

Each educational system works differently, starting from how HE is structured to who can access HE. Moreover, the autonomy HE institutions have differs among EU countries.

These structural realities greatly shape WHAT and WHEN can be done to implement ethical use of AI in education.

Guiding reflection questions

Does your university or your national Ministry of Education decide on the ethical guidelines for AI in education?

Do teachers and students in your university benefit from training on the ethical use of AI in education?

Can you autonomously integrate ethical guidelines of AI use in education in your course syllabi?

Who can you contact when there is an ethical breach of AI use in education?

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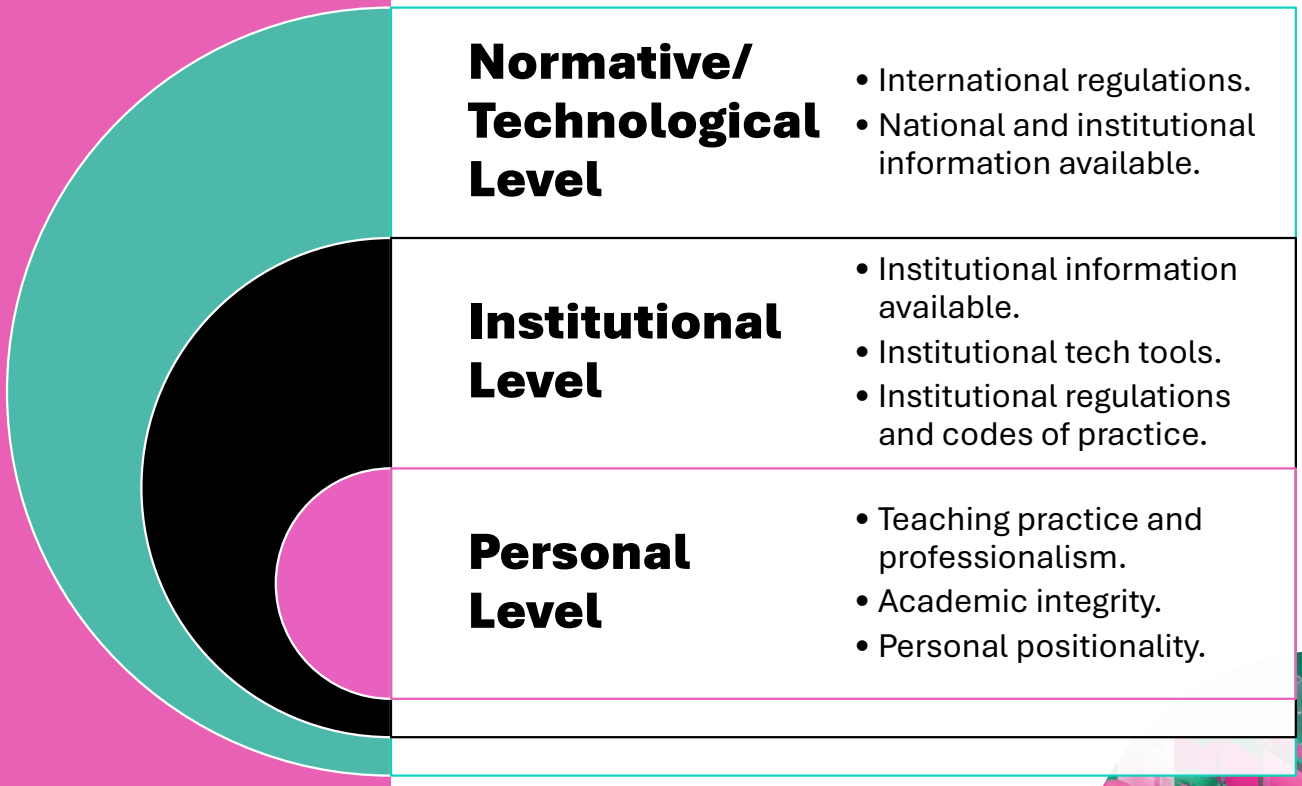
Levels to understand the ethics of AI and data in the educational practice

The **ETH-TECH team** conducted **Awareness Raising Sessions** with students and teachers in the **4 project countries***. These sessions uncovered the multilayered dynamic of ethical use of AI in education.

Participants in the Awareness Raising sessions conceptualized **three hierarchical levels of ethics in practice**:

1. Normative/Technological;
2. Institutional;
3. Personal (teacher, student, classroom as regulated interaction of individuals).

This dynamic is synthetized in Figure 1 and detailed below.



*The country-level reports detailing the sessions and national conclusions are available online: Germany (HSU team) - Italy (UNIPD team) - Rumania (BBU team) - Spain (UB team)

These levels are intervowen

...and require **knowledge, debate and common understanding**, particularly starting from the **normative and the least understood technological level.**

Normative/ Technological level

AI systems in education are proprietary and often work as "black boxes". The technology behind their structure, data storage and sharing, use of generative AI and decisions is not clear to HE actors. This technology is decisive for how HE learning and teaching happens and can be monitored, but the mechanisms are not transparent. There is great need for transparency, education on privacy and data governance, clarification of accountability, and access to technically robust and safe AI systems.

Proprietary systems are obscure about their compliance with regulatory requirements and ideal practice. National alliances and policies can support digital and data sovereignty, including technological robustness and users' final control upon the daily technologies. However, policies can be in conflict with a costly approach to technology, in a space where Big Tech solutions are efficient and even provided for free. These are shortcuts for voters/users' satisfaction and a positive public opinion.
Despite the "Terms of Use" detailed explanations, many systems offer little alternative to opt out whenever the participant wants to protect their privacy. Procurement, as the action undertaken by the institutions to achieve the best technological instruments in the software, is not always focused on ethical concerns as exposed in the EU guidelines. Therefore, despite the existing regulations, their implementation in practice is troubled by these (and the other level) pragmatic decision making by users.

Educators and students are often unaware of how AI systems influence pedagogical decisions. Technology is the big decider in what, how, and when students learn in that it is always available, and it is perceived as being non-judgmental and all-knowing. Nevertheless, both teachers and students don't understand how the immense corpus of knowledge of genAI is generated and how to counteract false information that is presented by technology as scientific fact.

These levels are intervowen

...with the **institutional level** providing key infrastructures and organisational cultures to support end users to be more or less aware about the relevance of ethical approaches.

Institutional level

Students demand **shared responsibility** but often see teachers as accountable for any ethical framing and decision for their AI usage.

Institutional governance is not clear, and **digital/technological sovereignty** is problematic. In some national context, teachers are the only ones who can use institutional open-source AI.

Ethics cannot be outsourced to the individual alone and **intergenerational shared responsibility** is key to the success of the regulation of AI ethics in universities.

Technical decisions need to be clarified from an ethical perspective (e.g., informed consent, types of data that are stored, how and for how long). From a student perspective, awareness raising is needed, as they are not aware about the consequences of their **digital footprint**.

The is a clear need for operational recommendations for how **student evaluation** needs to change:

Who evaluates students, and how, when genAI involved?

Personal level

These levels are intervowen

... the **personal level** is crucial because it is where the existencial ethical dilemma takes place, and where the decisions about technology are made.

AI is often used in secret, as students and teachers feel that the lack of regulation at institutional level may indicate that they are forbidden to use it.

There are **very strong emotions elicited by the ambivalence and moral lack of clarity regarding the use of genAI in education**. Emotions that arise are: guilt, bitterness, frustration, anger, helplessness.

Integrating **diversity** (cultural and sociotechnical) and **contextualization** (of teaching and learning) play core role when we use the EU principles.

Negative cognitive outcomes of overreliance on AI in education arise. The overreliance on AI generates a **simulation of education** *("Students simulate learning, and teachers simulate teaching")*.

Hence, we could say AI is provoking a *performance-based* education.

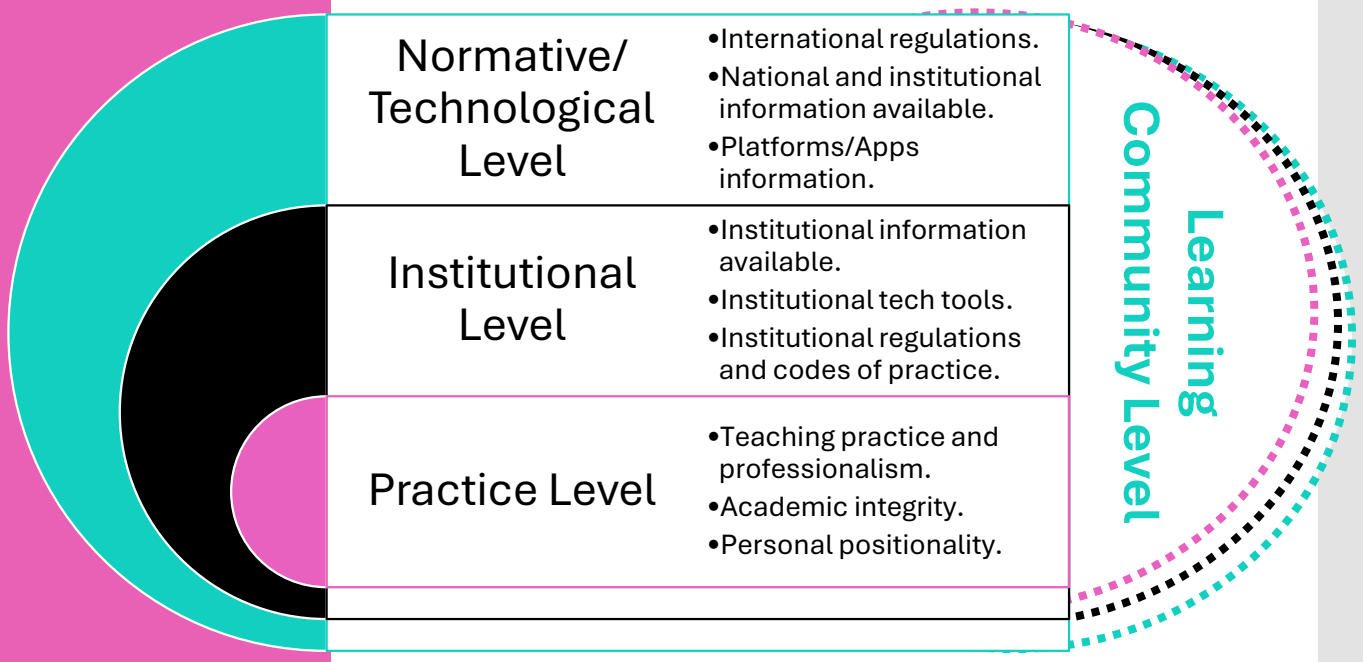
There is great need for **critical thinking**, **informed judgement and professional agency**, **awareness of gen AI bias** toward minorities, and the **creation of peer communities of practice** around AI.

An ethical practice is grounded in a community approach

Overall, this type of approach should encompass a situated understanding of AI tools, which is supported not only by a normative, technological and professional informed practice, but also, by affective infrastructures that are built upon reflection, relationships and experiences connected to AI and data in education.

Below, there is a figure that builds upon the prior scheme of three levels, integrating the community level concept.

A situated community disentangles the meaning, the impact and the implications for governance and for individual flourishing of using AI-powered tools.



How can we explore ethical practices about AI and Data from community lenses?

First, it is essential **to ensure meaningful consent** for AI use by **co-creating "formative" or "educational contracts"** at the beginning of courses, while offering students alternative paths without penalty.

Human oversight must remain central, preventing automated systems from making unchecked decisions. Equally important is the promotion of **transparency regarding how data and algorithms** function, coupled with shared decision-making about tool adoption, embedding ethics into the curriculum through **participatory and democratic pedagogies.**

Institutions should also provide opportunities for both teachers and students to reflect, develop skills, and form personal opinions on the ethical use of AI. **Participatory** processes about **procurement** should be considered.

Furthermore, **technologies need to be designed and adapted to meet real educational contexts** rather than imposing generic solutions. Finally, a shift towards process-oriented student assessment is recommended, emphasizing real-time actions and learning processes instead of outputs influenced by generative AI.

Three ethical principles are deemed central, though.

After the Awareness Raising Sessions

The participants' discourses mostly focused three ethical principles that emerged as the most stringent to be approached to build ethical practices here and now:

Three out of Seven Principles

- Human Agency and Oversight.
- Transparency
- Diversity, non-Discrimination and Fairness

Let's explore them!

In the following, we will introduce a friendly definition, a case study and guiding questions to instantiate the above-mentioned principles into teachers' and students' daily practice.

Friendly Definition

Ed-Tech enhanced by AI should help teachers and students reach their teaching and learning goals and work with colleagues to create better academic and educational work. At each point, it is key that teachers have control and oversight of the AI-supported products so they can intervene in cases of errors, misinformation, discrimination and student overreliance on the systems.

Human Agency and Oversight

Case Study

In a software certification course, there is a very active group of participants who promote informal support for the study. In this regard, they have opened a WhatsApp channel to support each other in their learning efforts. Within this group, it emerges that the use of AI tools such as Claude or Copilot is perfect for writing a programming assignment required in one of the teachings. The teacher is not aware of the tool and does not have access to efficient tools for detecting AI-generated content, as they have not been developed yet. Therefore, many students create their entire assignment with AI. Despite some surprise at the unusually high work quality of this generation of students, the teacher does not worry much: the more participants are certified, the higher the success rate of the course, the better the remuneration. The use of AI in students' work is not discussed during the course, and students begin to use AI as a shortcut to complete their assignments rather than a tool that can assist them in their learning.

Guiding Questions

Can you relate to this situation? In your local educational context, do you think students can use AI as a tool that impairs their learning process, despite seemingly leading to good results?

Action Points: Institution

Human Agency and Oversight

Problem: Teachers ask the university leadership to clarify the role of genAI in EdTech products that are formally used by the university to facilitate teaching and student learning. They stress that more genAI has been introduced in the last versions of these products and fear that student decisions are now controlled by AI.
Action point: Require human oversight of automated decisions. AI-guided decisions for different features need to be transparent to the teachers who can then facilitate or restrict student access to these features. Especially when AI features reflect content creation or student grading, teachers need to be able to make decisions regarding feature activation or customization.

Problem: Teachers and students complain that they don't fully understand the limitations of genAI use for education. The former ask for institutional regulations and the latter claim that they can decide themselves how to use AI for education, as there are no clear rules.
Action point: Considering national and university regulations regarding the use of AI for education, create an ethical code and implementation rules (in terms of actions for specific issues) that all teachers must adhere to and integrate into their syllabi and all students must formally acknowledge at the beginning of the academic year.

Problem: The ethics committee of your university faces new and more complex ethical complaints brought by teachers and students regarding the fraudulent use of genAI and cannot keep up with updating the ethical code of the university of these issues.
Action point: Make a database of types of problems and complaints on the unethical use of AI and genAI in education, to gradually create categories of problems. By making legal advisors, tech specialists, teachers, and students aware of types of problems, a community focusing on transparent problem-solving can be developed. This can be a procedural manner to ensure transparent and participatory decision-making for AI-related issues in education.

Action Points: Teacher

Human Agency and Oversight

Problem: The learning community of a course has been greatly affected by the ambivalence of AI use for education, which some students perceive as cheating and others see as a natural enhancement to their academic learning process.
Action point: Ensure meaningful consent for AI use in education and offer alternatives without penalty, by co-creating "didactic contracts" at the course outset.

Problem: The assignments students turn in have many fake references (including of your own publications) and use a complex and somehow unnatural type of phrasing. You suspect that they have been generated with the use of genAI.
Action point: Shift towards process-oriented student assessment, that relies on here-and-now actions and is not influenced by gen AI. Oral evaluations and project work that occurs during seminars as “in-basket” or situational tests can better capture students’ competences.

Problem: Students don’t understand how the excessive use of genAI for education can negatively impact their critical thinking.
Action point: Teach students to critically reflect on contents generated by genAI for questions you use in your own course. You can introduce the development of critical reflection on genAI use for education as a transversal skill that your course develops.

Action Points: Student

Human Agency and Oversight

Problem: Teachers do not clearly state in the course syllabi if and which genAI you can use for academic learning.
Action point: Openly discuss with the professoriate as the beginning of the academic year which is the official position of the university and each teacher's specific course regarding the use of AI for academic learning.

Problem: All your colleagues have been using genAI for most academic work and you feel you also must use it to remain competitive.
Action point: Critically analyze what "competitive" means for a specific course. Using genAI for generating academic work does not enhance your knowledge and competences and often creates just an illusion of competency.

Problem: The answers that the genAI conversational agent has been giving you for a question that your teacher approached in a course are very different from what the teacher presents during the course.
Action point: Critically analyze each answer and discuss with the teacher the differences you identified. Fact checking and careful reading of references used by the AI and the teacher are very important in understanding why the answers are different.

Friendly Definition

AI systems need to clearly explain how they function, what data they collect and for what purposes. Students, teachers and universities should be informed about these aspects so they can give their informed consent when using AI systems.

Transparency

Case Study

A university introduces an AI-powered software that assists students in their learning. It works as a virtual assistant which gives students detailed instructions and feedback on their tasks but also includes emotional support to help students manage their mental health during times of academic stress. Both students and teachers are happy to use this free system: students appreciate the immediate and personalized assistance, while teachers appreciate the reduced workload. However, some students notice that they began receiving ads for paid study materials, online courses and tutoring services. Some of them also received ads for mental health services, and apps targeted on issues like those discussed with the software's chatbot. Over time, students and teachers become sure that the data is shared with third parties and used for commercial profiling.

Guiding Questions

Do you know what data is collected during your interactions with AI systems you use in your educational context and how it is later used?

Would knowing your data is shared for commercial profiling influence if and how you (as student, teacher or institutional educational staff) use AI systems?

Action Points: Institution

Transparency

Problem: Teachers and students point out that the AI systems officially used by the university are linked to commercial platforms that offer personalized solutions based on class work.
Action point: Promote transparency about how data and algorithms work. Request the AI system provider to provide and explain how data collected from university users are used and shared.

Problem: Administrators and teachers point that existing university-level are not available or outdated to deal with genAI ethical issues in HE.
Action point: Make shared decisions about tool usage and curriculum-integrated ethics as approaches aligned with participatory pedagogies and democratic education.

Problem: Though the university provides an ethical code for AI use or references the EU-level regulations, teachers and students do not understand these regulations and cannot link them to their teaching and learning practice.
Action point: Provide training for both teachers and students on ethical AI use, using co-design scenarios that deal with learners and community problems.

Action Points: Teacher

Transparency

Problem: Integration of AI-generated materials in the course can be useful as practical examples for many subjects. Nevertheless, when the teacher generates material using complex prompts for a genAI agent, it is not clear who owns the product and how it will be used by the AI developer company in the future.
Action point: When given the possibility, always opt for an open-source solution to generate new course material or a genAI solution that is transparent about data storage and sharing.

Problem: As teachers use multiple AI and genAI tools in their teaching practice, it may be difficult to keep track which tools are transparent on their data sharing practices.
Action point: Take time at the beginning of each year to choose the AI tools you will use for education. Then gather information on how the information you input into AI systems for education is being stored, shared, and who owns the products you develop with the help of AI.

Problem: It is not clear how GenAI powered learning tools evaluate student knowledge and competence acquisition, which makes it hard for the teacher to accurately assess how much students have learnt.
Action point: Become informed how the AI systems you use for student learning gather information to provide assessments of student learning progress.

Action Points: Student

Transparency

Problem: genAI is easy to use and offers quick answers starting from very simple questions. But students become increasingly aware that their choices when using AI for education are transferred to other platforms that may not be linked to education.
Action point: Understand what the "digital footprint" means. If private companies are behind AI tools, data will be collected for commercial purposes. There are multiple negative ethical implications of educational contents and educational decisions that are monetized without the awareness and active consent of the user.

Problem: It is difficult to understand how AI and genAI work and where to search for easy-to-understand information on how these systems function, who is responsible for their mechanics, and how data is being used.
Action point: Read and watch presentations developed by legislators that try to regulate AI for education. Here are presentations of the AI Act developed by the European Commission (2024): https://artificialintelligenceact.eu/ *
Take into account that the complexity of the technological systems behind genAI cannot be fully grasped from a short presentation..

Website maintained by the **Future of Life Institute (FLI)**. FLI is an independent non-profit working to reduce large-scale, extreme risks from transformative technologies. https://artificialintelligenceact.eu/about/

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Friendly Definition

All teachers and students should be able to access the AI (or Ed-Tech enhanced by AI) in the same manner and the AI system should be designed to accommodate for the diversity of all students, including those with special needs.
AI systems should not facilitate discrimination or other inequitable practices.

Diversity, non-Discrimination and Fairness

Case Study

A professor at a multicultural university created a presentation of the university for prospective students.
Dall-E (an image generation system) and Canva (freemium versions) are used to generate the presentation. In creating some of the images, the professor realizes that all the images of scientists generated by AI include middle-aged men, usually Caucasian and shown in a central position.

When the prompts are changed to ask for female and disabled scientists, they are usually presented in a supporting role.

Guiding Questions

Do you think AI can reinforce pre-existing stereotypes and biases in your context?
Do you think that in your university/educational institution AI is equally accessible for all students, regardless of background and possible special needs?

Action Points: Institution

Diversity, non-Discrimination and Fairness

Problem: AI and genAI educational products implicitly promote stereotypical presentation of learners and expected learning outcomes. Gender stereotypes, mental health stereotypes, performance stereotypes, educational achievement expectations are embedded in images, types of tasks, and evaluation options.
Action point: Choose an AI tools for education that is customizable to the characteristics of the student learners in your university and that offer teachers the possibility of customization for a specific course.

Problem: Many AI solutions for education do not accommodate the learning needs and learning pace of students with physical and/or cognitive disabilities. They promote the idea that everyone can become competent and can reach the same high levels of performance.
Action point: Provide teachers technical support to tailor AI tools that can be adopted by diverse students. Technical staff needs to have operational competences in choosing the most appropriate AI tools for education for specific types of student disabilities. Refuse AI tools that does not align with diversity-

Problem: AI instruments for education do not acknowledge the diversity of learner needs and do not promote the role of acceptance of diversity from teachers and students.
Action point: Focus on offering teachers training programs that help them recognize and work with student diversity by fostering inclusion and acceptance.

Action Points: Teacher

Diversity, non-Discrimination and Fairness

Problem: The AI solutions for education have built-in features that promote stereotypical representations of student learners and provide learning scenarios that further reinforce these stereotypes.
Action point: Critically analyze each product you develop for academic teaching with the help of AI tools. Become aware the stereotypes you may involuntarily reinforce and develop reflection activity in class that can debunk these stereotypes.

Problem: AI solutions for education do not assess or consider the special needs of student learners, whether these needs refer to special learning needs (e.g., learning difficulties or disabilities), physical or mental health difficulties (e.g., ADHD, depression or anxiety problems), socio-economic disparities (e.g., lack of family support).
Action point: Use classroom interactions as opportunities to explore how existing AI tools used for academic learning are adequate for the students you work with. Encourage students to use existing psycho-social support services offered by the university, to search for appropriate human help when troubled by AI systems.

Problem: Discrimination and unfair treatment of student learners through AI tools can lead to negative emotions in students (e.g., frustration, anger, helplessness), which in turn influence the learning community emotional climate and student-teacher interaction.
Action point: Directly address in classroom activities how students feel about AI-generated activities, exploring negative and positive emotions.

Action Points: Teacher

Diversity, non-Discrimination and Fairness

Problem: Students feel unrepresented or even misrepresented in AI-generated materials.
Action point: Bring to the attention of your teachers during class how AI-generated materials paint a stereotypical picture of a person, community, or activity. Clearly address HOW these materials need to be changed, to integrate diversity in a fair manner.

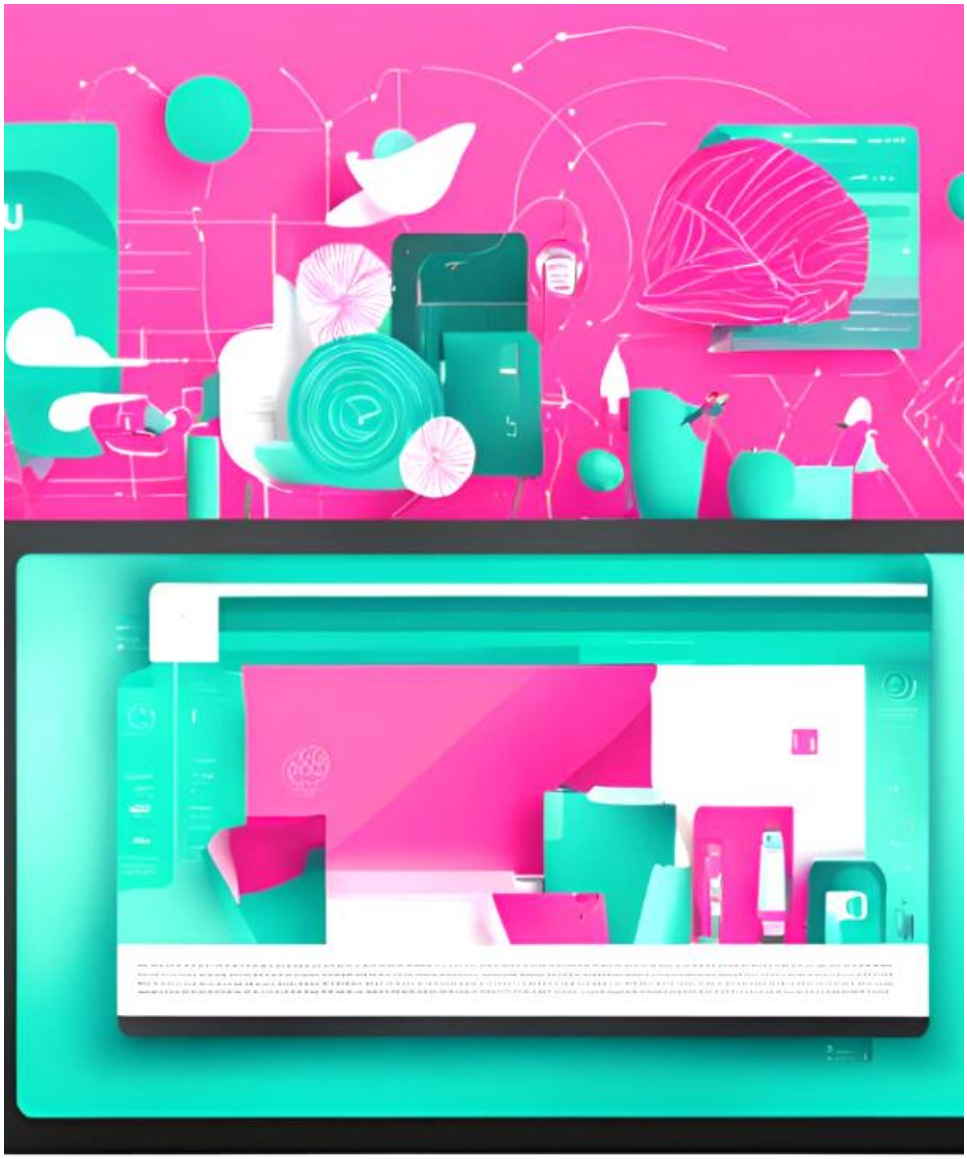
Problem: Students with special needs or coming from minority backgrounds feel that they do not matter when interacting with AI tools for education.
Action point: Actively engage with existing psycho-social support services offered by the university to raise awareness on discrimination and a tailored approach to university learning.

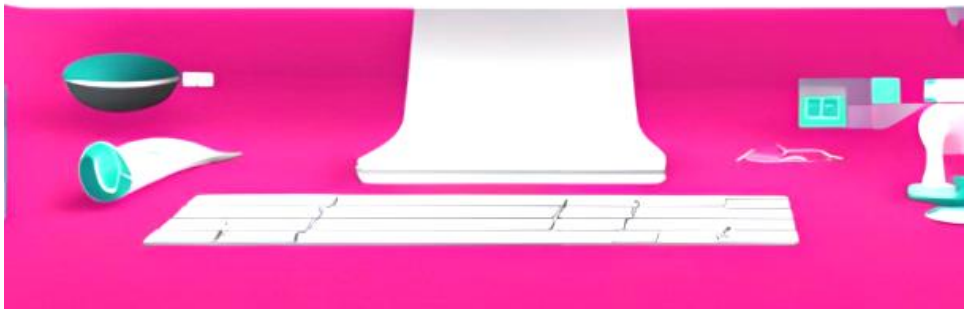
Problem: Negative emotions about discrimination and unfair treatment in the use of AI tools for education are strong barriers to students' adaptation and success at the university.
Action point: Express and seek validation for negative emotions linked to discrimination and unfair treatment in the use of AI solutions for education. Talk to teachers, colleagues, and university administrators, focusing on the specific instances when discrimination occurred.

What's next?

If you want to dig deeper, we recommend you visit our **SELF-REFLECTION TOOLS.** The interactive materials will allow you to consider your current state of understanding and knowledge about the ethical guidelines of AI and data in Education.

If you want to know more and to start paving your way to ACTION, we recommend you to engage into our **EDUCATIONAL MATERIALS.**





Glossary

- **GenAI =** generative Artificial Intelligence
- **HE =** higher education
- **GenAI conversational agent =** conversational agents are taken to be: "A programmatic and intelligent way of offering a conversational experience ... that is informal, engaging, and mirrors everyday language ... to mimic conversations with real people, through digital and telecommunication technologies ... and informed by rich data sets" **

  GenAI conversational agents are based on GenAI models and structured chatbots, like Gemini (Google), ChatGPT (OpenAI), Claude (Antropic) or Copilot (Microsoft).

- **AI tool/instruments :** Apps that run on the web or on phones/tablets and use machine learning (including large language models) to automatically generate outputs on demand from academic staff and learners.

  For example: General purposes chatbots like ChatGPT or Copilot which adoption spans from learning design to assignments' writing and grading; Writing support like Grammarly or Quillbot); Audio & video tools like Otter.ai or ElevenLabs There are many other specific apps for each domain, and for many purposes like also coding helpers or customer support chatbots sometimes adopted in Education. There are also specifically designed AI tools, like Perusall (collaborative learning) or Turnitin AI indicators. All the listed AI tools can raise ethical issues in different ways (hallucinations, stereotyping, biometric data misuse, surveillance).***

- **AI for education =** Artificial Intelligence products that are formally or informally used for university learning and teaching
- **Open-source AI =** "Data Governance and Open Source AI" (Open Source Initiative, 2025), Open Source AI (OSAI) is defined as:

  *"AI systems that are developed, shared, and distributed under licenses that permit access to the source code, datasets, models, and documentation, allowing for use, study, modification, and redistribution by anyone."**

*Open Source Initiative. (2025). *Data governance and open source AI* (Version 5). https://opensource.org
** Overend, R., Stefanoff, S., Jackson, P., Rayment, S., Cooper, S., & Taylor, D. (2019). Conversational AI: The next wave of customer and employee experiences. *Deloitte Digital*.
*** UNESCO (2023, UPDATED 2025): Guidance for Generative AI in Education and Research. https://www.unesco.org/en/articles/guidance-generative-ai-education-and-research

Executive summary

The ETH-TECH framework reflects the **teaching and research expertise of teams from 4 European countries** (Germany, Italy, Romania, Spain). In proposes a **culturally sensitive** and **contextualized** approach of the ethical principles developed at EU level. It is grounded on the participatory Awareness Raising sessions that took part in spring 2025 in the 4 countries, involving university teachers and students.

For a contextualized ethical approach of AI usage in HE we recommend: (a) a careful analysis of the role of **culture** in how ethics of AI is understood and how responsibility is negotiated; (b) an in-depth understanding of the national and local **socio-economic dynamics**, with a focus on existing affordances and structural barriers; (c) an integration of national recommendations in the **structure of the specific educational system**.

The ETH-TECH framework conceptualizes three **hierarchical levels of ethical engagement with AI for education**: 1. **Technological**; 2. **Institutional**; 3. **Personal** (teacher, student, classroom as regulated interaction of individuals). These levels are interwoven, with the technological level (how AI systems work, how they are regulated and transparent, how personal data is managed) being the opaquest, often working as a "black box".

The **three EU principles** that the ETH-TECH framework focuses on are: **human agency and oversight**, **transparency,** and **diversity**, **non-discrimination and fairness**. Each principle is presented through an intuitive definition, a case-study with guiding questions, and practical recommendations for institutions, teachers and students using a problem – action point format.

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