Università degli Studi di Padova / Universitatea Babeș-Bolyai

Instruments to support Reflection

On the ethics of edtech

ETHTECH

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Outline

01 Theoretical Structure

02 ARS Learned Lessons

03 Some conceptual notes

04 Cases supporting reflection

05 Mock-up for an interactive ìnstrument

06 Interactions and Visuals

Theoretical Structure

Developing an instrument to trigger individual reflection on ethical practice

UE Guidelines

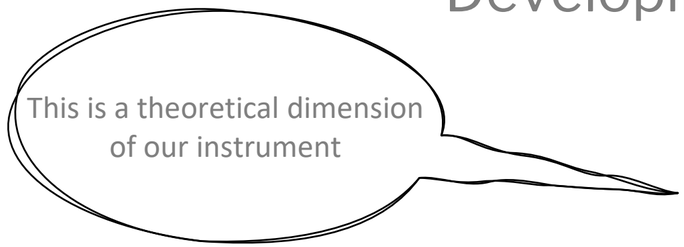
European Commission: Directorate-General for Education, Youth, Sport and Culture, Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators, Publications Office of the European Union, 2022, https://data.europa.eu/doi/10.2766/153756

- **Human Agency and Oversight**
- **Transparency**
- **Diversity, non-Discrimination and Fairness**
- **Societal and Environmental Wellbeing**
- **Privacy and Data Governance**
- **Technical Robustness and Safety**
- **Accountability**

Initial theoretical structure.
Source: Policy Recommendations **REVISITED under ETH-TECH WP2**

Theoretical Structure

Developing an instrument to trigger individual reflection on ethical practice



Human Agency and Oversight

Reflection on Individual Practices

*“**I ensure** that my role as a teacher is clearly defined to remain actively involved while the AI system is being used”.*

Reflection on Institutional Practices

*“**The institution where I work ensures that** my role as a teacher is clearly defined to remain actively involved while the AI system is being used”.*

Theoretical Structure

Developing an instrument to trigger individual reflection on ethical practice

Human Agency and Oversight

Individual reflection

- I ensure that my role as a teacher is clearly defined to remain actively involved while the AI system is being used.
- I reflect on how the AI system influences my didactical role in the classroom.
- I make decisions that impact students with agency, and I remain attentive to identifying anomalies or potential discrimination.
- I follow procedures that enable me to monitor and intervene, particularly in situations requiring empathy when interacting with learners or parents.
- I ensure that learners have mechanisms to opt out if their concerns are not adequately addressed.
- I utilize monitoring systems to avoid overconfidence in or overreliance on the AI system.
- I seek out and use the necessary training and information to effectively use the AI system, ensuring its safe implementation without causing harm or violating students' rights.

Theoretical Structure

Developing an instrument to trigger individual reflection on ethical practice

Human Agency and Oversight

Institutional reflection

- My institution helps me ensure my role is clearly defined to stay actively involved while the AI system is being used.
- My institution supports me in reflecting on how the AI system influences my didactical role.
- My institution provides me the means to make decisions with agency, stay vigilant for anomalies, and prevent discrimination.
- My institution helps me follow procedures to monitor and intervene empathetically when interacting with learners or parents.
- My institution supports me in ensuring mechanisms are in place for learners to opt out if their concerns are not addressed.
- My institution provides me monitoring systems to avoid overconfidence in or overreliance on the AI system.
- My institution ensures I have access to the necessary training and information to safely and effectively use the AI system

ARS LEARNED LESSONS

From the Report of ARS-Syllabi & Practices:

- Experience on AI is low, therefore, analysing the **ethics of AI is not an immediate** exercise.
- Some areas of the ethics of AI and data are **better represented** than others.
- Many participants were interested **on concretely experience or understanding AI** before entering into a reflection about the applied ethics.

Progress of work

January 2025 – KoM (Presentation shared, not discussed)

- Should we create further scenarios?
- How can we promote better understanding of the several dimensions?
- Do we need an introductory short text on each of them, or an illustration?
- After the visuals, how could we create further suggestions to engage with active/agentic practices? How can (should?) this be addressed into the OER?

June 2025 – Methodological Approach

- Scenarios Based on concrete narrative and visuals (stemming from ARS experiences)
  - Narrative – Concrete Understanding of an ethical issue
  - Visual – Triggering Emotional reaction
- Interactions:
  - Go through an initial question triggering personal experience and imagination.
  - Placing the personal experience in a «map» or using a «compass» to situate the personal/institutional situation
  - Narrative/visual about the «signpost» selected by the person.
  - Questions/Visual feedback as a «map»
  - Suggestions to learn more & Liaise with the OER

Structure of a Case

- Educational Practice in Higher Education (A set of cases prepared for Educators' Professional Practices)
- Problem-based: concrete ethical problem that is not self-evident, but that can be explored against the emotions and values triggered in the participant.
- Based on the literature connected to the seven EU principles and critical ed-tech literature:
    - E.g.: Chatbots usage for cognitive or emotional support, Learning Analytics (data-tracking, metrics, quantification), Academic Integrity issues, Private platforms in public education, etc.
- Connected to a) synthetic definition of underlying EU principle and b) self-reflection questions

Human Agency and Oversight

What does this principle mean?

Ed-Tech enhanced by AI should help students reach their academic goals and work with colleagues and teachers to create better schoolwork. 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.

Case study A

(slight adaptation of UNIPD's proposed case D)

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 completing their assignments rather than a tool that can assist them in their learning.

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?

Always considering your university and local context, what responsibilities do students, teachers, and other staff have in making sure AI supports the learning process while also respecting academic integrity?

Initial Question triggering experience's recall/ imagination

Situating Personal Imagination on a map of other experiences [NARRATIVES]

Situating Emotions [IMAGES]

Understanding ethical principles [EU CARDS]

Me/my institution: Self-assess and see the map [VISUALS]

Suggestions to learn more [LIAISE WITH THE OER]

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Hands on!

All participants collaboration is required...

Individual Self-Reflection Section

▶ How to READ reports and Graphs

▼ Individual Self-Reflection Survey

In this section, you can log in to complete a questionnaire that helps you reflect on **your personal** beliefs, practices, and ethical attitudes concerning the use and development of AI in education.

The questions are structured around the **key ethical dimensions** identified in the European guidelines, offering an opportunity for introspection and personal awareness.

STEP 1 – EXPLORE

▼ Comparative Report

Curious to see how you compare with your colleagues?
After completing the survey, you can view and **compare your responses** alongside aggregated results from other users.

The report highlights overall trends and levels of engagement, helping you understand **your position** and identify areas for reflection and potential improvement.

STEP 2 – SEE!

A taste of the Self-Reflection Tools!

From the form to your individual results

ETH-TECH

Català

About the Individual Self-Reflection Tool

This self-reflection tool was developed within the **ETH-TECH project** (eth-tech.eu) as an interactive resource to help you reflect on your current understanding of ethical guidelines for artificial intelligence and data use in education. It presents a series of questions designed to explore how researchers perceive and apply these guidelines.

Your results will be available at the end of the survey, and you can then visit the ETH-TECH project website (*Self-Reflection Tool* page) to explore general dynamic visualizations and compare your responses with broader trends.

The questionnaire is divided into three main sections:

1. **Professional Profile** – 4 questions
2. **EU Guidelines Theoretical Dimensions** – 7 questions
3. **Self-assessment** – 4 questions

Estimated completion time: 10-12 minutes

Thank you very much for your valuable contribution!

ETH-TECH

Español

Below are your response scores (out of 5).

- **Human Agency and Oversight**: 4
- **Transparency**: 3
- **Diversity, non-Discrimination and Fairness**: 3
- **Societal and Environmental Wellbeing**: 2
- **Privacy and Data Governance**: 3
- **Technical Robustness and Safety**: 1
- **Accountability**: 1

These values provide a quick summary of your responses during the survey and are for reference only.

You are almost done!

Looking at the scores you assigned yourself, **in which area** do you feel you need more support or intervention?

Feel free to add any comments or observations you consider relevant.

I feel I know very little about the digital infrastructure we adopt everyday. Also, I'd like to be provided with safe tools. That happens, but many times my understanding of this dimension is very limited

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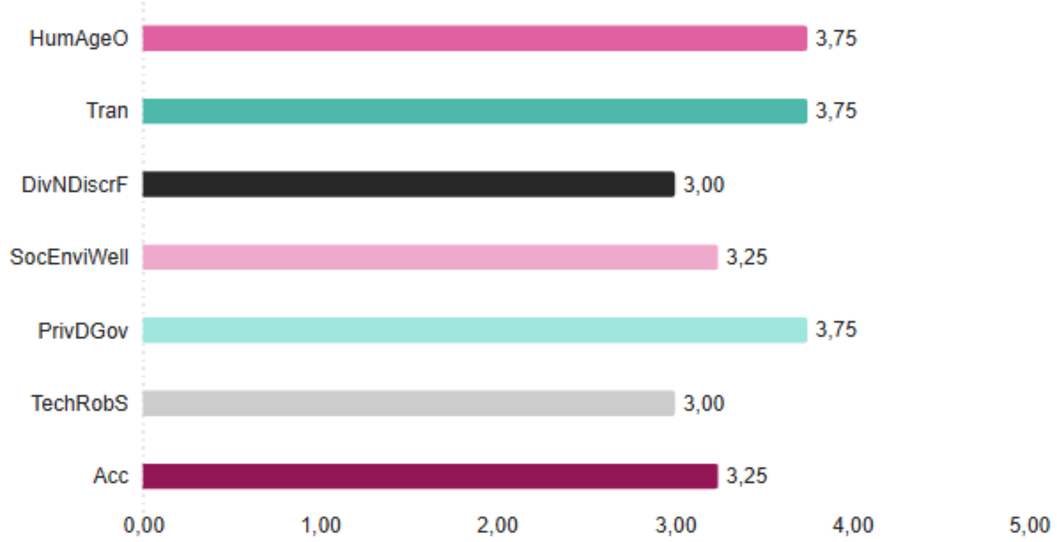
Individual Report - Aggregated responses

User Self-perceptions on AI Use in Education

This table presents the average self-assessment scores of users for each key dimension of AI use in education.



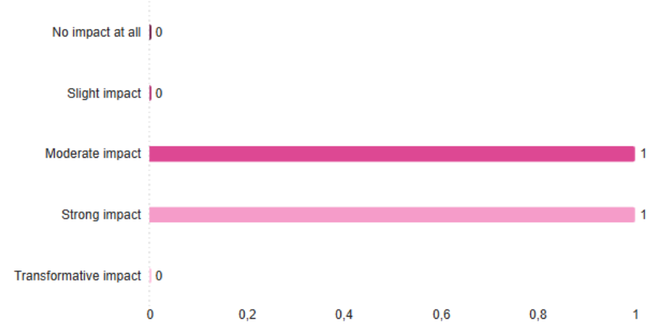
Personal Reflection

Areas where more support or intervention is perceived as needed.

See others' responses

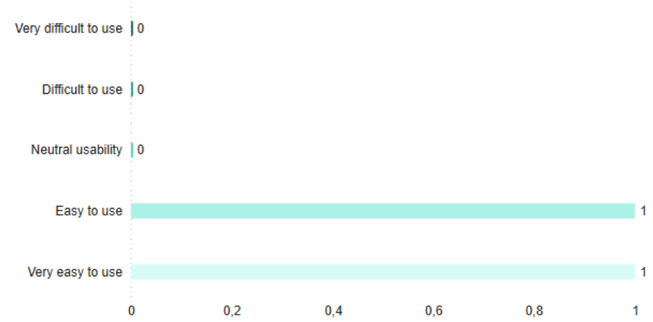
Promotion Reflection AI ethics

How much the tool helped users reflect on AI ethics.



Ease of Use

How easy the tool was to use.



Access to the Self-Reflection Tool

From the website
https://eth-tech.eu/results/self-reflection-tool/

From the form
https://unipadova.qualtrics.com/jfe/form/SV_d5TAqUi4NkwfGeO

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Individual Report - Aggregated responses

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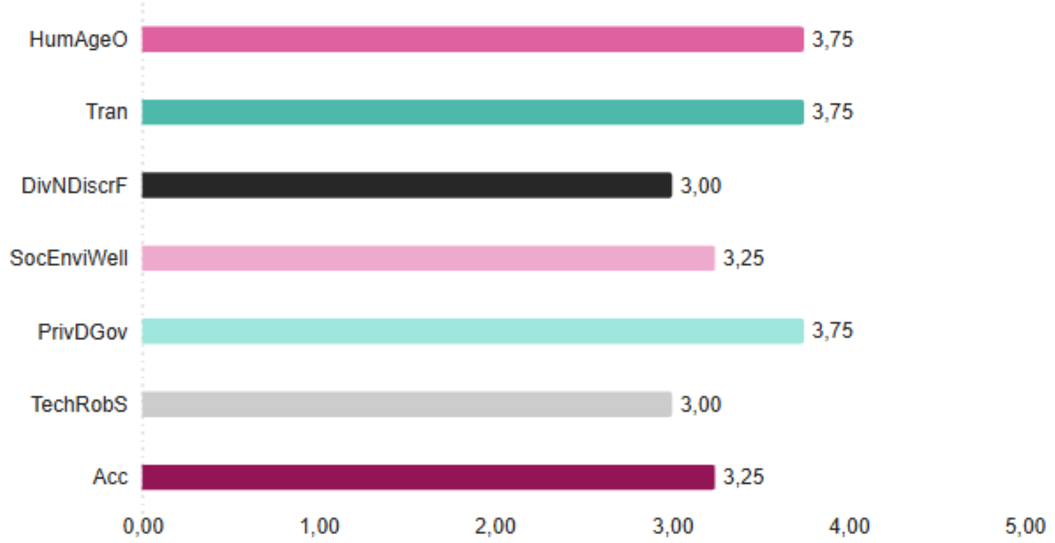

Personal Reflection

Areas where more support or intervention is perceived as needed.

See others' responses

MOCK UP

Self-reflection tool deployment

ETH-TECH

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MOCK-UP

Welcome to the ETH-TECH* *self-reflection tool*

**ETH-TECH is a project aimed at reconsider our practices with AI and DATA to cultivate an ethical perspective*

Let’s get started

What are you curious about?

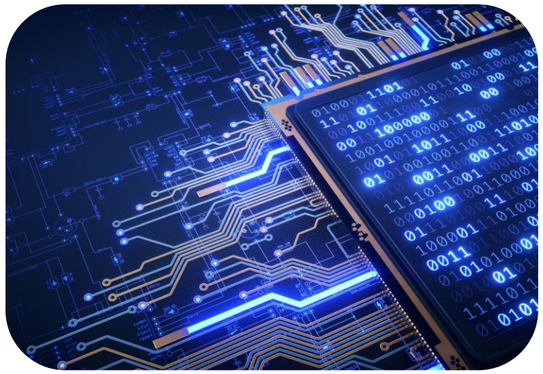
Select an image OR a keyword

Let’s go!

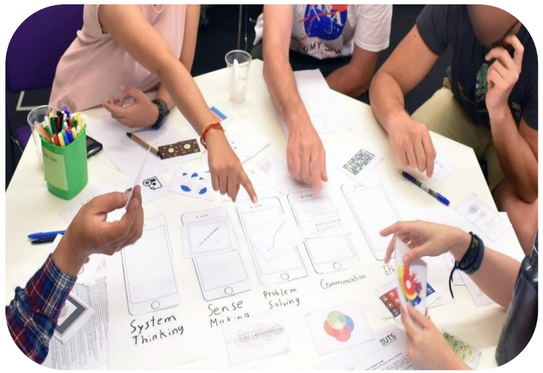
Mock-up

Which image raises your curiosity, affection, imagination?

Human Agency and Oversight

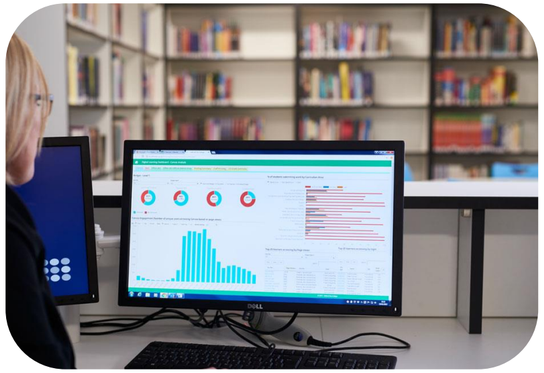


Transparency



Diversity, non-Discrimination and Fairness

Societal and Environmental Wellbeing



Privacy and Data Governance

Robustness and Safety

Accountability

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OK!
Let’s reflect about this idea....

Human Agency and Oversight

Let’s take a look at this image.
This group of students is apparently relating positively to technology to accomplish some task.

Do you agree?

Now, what if they were not able of controlling the outcomes of the used technology and the results where unexpected? How would be the feelings about?

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OK!
Let’s take a closer look to this image….

Human Agency and Oversight

This is the type of problem we characterise as a lack of human agency (you lose control) and oversight (you cannot intervene to gain control)

Have you ever experienced lack of control over a technology you were using?

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Centre your experience & feelings

Human Agency and Oversight

Just drop some line about your experience

Your thoughs

Want to take a look at what others said?

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In more technical words....

Human Agency and Oversight

What does this principle mean?

Ed-Tech enhanced by AI should **help students and teachers** reach their academic goals and work with colleagues and teachers to create better school work.

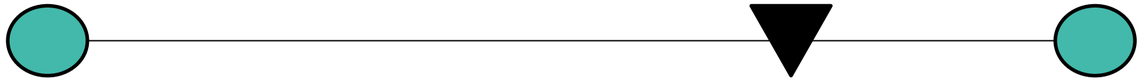
At each point, it is key that **students and teachers** have control and oversight of the AI-supported products so they can intervene in cases of errors, misinformation, discrimination and student overreliance on the systems.

In their shoes: A case study
About Human Agency and Oversight

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 are 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 completing their assignments rather than a tool that can assist them in their learning.

Listen the case

How close is your experience to this situation?



Never been in a similar situation

Very close

Ethical imagination

Imagine a solution to the problem presented in the case

Your solution (three lines!)

Want to take a look at the EU principles to see what are the key drivers to solve this situation?

EU principles

Human Agency and Oversight

In your solution…

Individual reflection

- X The role as a teacher is clearly defined to remain actively involved while the AI system is being used.
- ❑ The participants reflect on how the AI system influences their role in the classroom.
- ❑ There is control over decisions that impact students' agency, and the teacher remains attentive to identifying anomalies or potential discrimination.
- ❑ The teacher follows procedures that enables her to monitor and intervene, particularly in situations requiring empathy when interacting with learners or parents.
- X The teacher ensures that learners have mechanisms to opt out if their concerns are not adequately addressed.
- ❑ The participants engage in monitoring systems to avoid overconfidence in or overreliance on the AI system.
- X The participants seeks for the necessary training and information to effectively use the AI system, ensuring its safe implementation without causing harm or violating students' rights.

EU principles

Human Agency and Oversight

In your solution...

Individual reflection

3/7

What could you do to cover the other areas?

Read more...

Let’s refocus on your context

Once we considered some definitions, what is your opinión about your institution?

Institutional reflection

Human Agency and Oversight

- [x] My institution helps me ensure my role is clearly defined to stay actively involved while the AI system is being used.
- [ ] My institution supports me in reflecting on how the AI system influences my didactical role.
- [ ] My institution provides me the means to make decisions with agency, stay vigilant for anomalies, and prevent discrimination.
- [ ] My institution helps me follow procedures to monitor and intervene empathetically when interacting with learners or parents.
- [ ] My institution supports me in ensuring mechanisms are in place for learners to opt out if their concerns are not addressed.
- [ ] My institution provides me monitoring systems to avoid overconfidence in or overreliance on the AI system.
- [ ] My institution ensures I have access to the necessary training and information to safely and effectively use the AI system

EU principles

Human Agency and Oversight

In your solution...

Institutional reflection

1/7

Are there disalignments between your experience and what your institution provides?

Yes

Don't Know

No

Taking Action...

CASES

Triggering Reflection

Bianca Valentina Marinica (BBU)
Juliana E. Raffaghelli (UNIPD)

Human Agency and Oversight

What does this principle mean?

Ed-Tech enhanced by AI should help students reach their academic goals and work with colleagues and teachers to create better schoolwork. 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.

Case study A

(slight adaptation of UNIPD's proposed case D)

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.
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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?

Always considering your university and local context, what responsibilities do students, teachers, and other staff have in making sure AI supports the learning process while also respecting academic integrity?

Transparency

What does this principle mean?

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.

Case B
(new case, blending B/E Cases)

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 adds for mental health services and apps targeted at issues similar to those discussed with the software's chatbot. Over time, students and teachers grow confident that the data is shared with third parties and used for commercial profiling.

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?

Diversity, non-discrimination, fairness

What does this principle mean?

All 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.

Case C

(new case, inspired by B/C)

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 of 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.

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?

Societal and Environmental Well-being

What does this principle mean?

Students and teachers increasingly rely on AI tools for school work. Doing so should contribute to their well-being and not have a negative impact on broader ethical concerns, such as the considerable environmental impact of the wide use of AI.

Case D
(loose adaptation of case C)

A university's media and communication department annually creates video tutorials to help incoming students. Previously, older students were involved in the process of practicing their skills and earn course credit. Considering the high number of videos created, it was one of their most valuable internship opportunities. However, this year an AI-powered software is used to generate videos. This reduces time, costs and the workload of the university staff involved. However, a group of students voices their concerns over losing a valuable opportunity to improve their skills and over the fact that total energy used for these operations has important environmental costs, emitting as much CO2 as driving a gasoline car for 50km.

Are you concerned that AI can be used in ways that negatively impact individuals and potentially has broader negative consequences as well?

How do you feel about the use of AI systems to increase efficiency and reduce both financial and time-related costs?

Accountability

What does this principle mean?

Teachers and universities need to understand and monitor how Ed-Tech enhanced by AI is used in schoolwork, to be in contact with their developers for troubleshooting and to be able to explain how different problems can be addressed.

Case E
(loose adaptation of case E)

A university uses an online AI-based platform to collect and evaluate student assignments for a hybrid undergraduate program. Teachers use the system to monitor student progress and identify students at risk of failure, which they can notify of the risk based on their previous activity on the platform. Once a student receives a warning of being at risk of failure, they need to take on additional activities and complete supplementary assignments.
One student receives such a warning, despite conducting all the necessary tasks on the platform and without the teacher being aware of the sent warning. The student complains to the faculty about the situation, particularly about feeling pressured to complete additional time-consuming tasks to prevent failing the course. However, it is unclear how the warning notification got sent and it is later revealed that a system error led to the deletion of the activity of several students from the university. The provider did not communicate about the error, and it is unclear which students were affected by it, raising big concerns about how reliable the data from the platform is for evaluating students' activity during the semester that is almost over.

Who can you contact when something goes wrong with the AI you are using in your learning/teaching tasks?
What steps should students, teachers and technical/management staff in your university take to ensure potential issues are addressed efficiently?

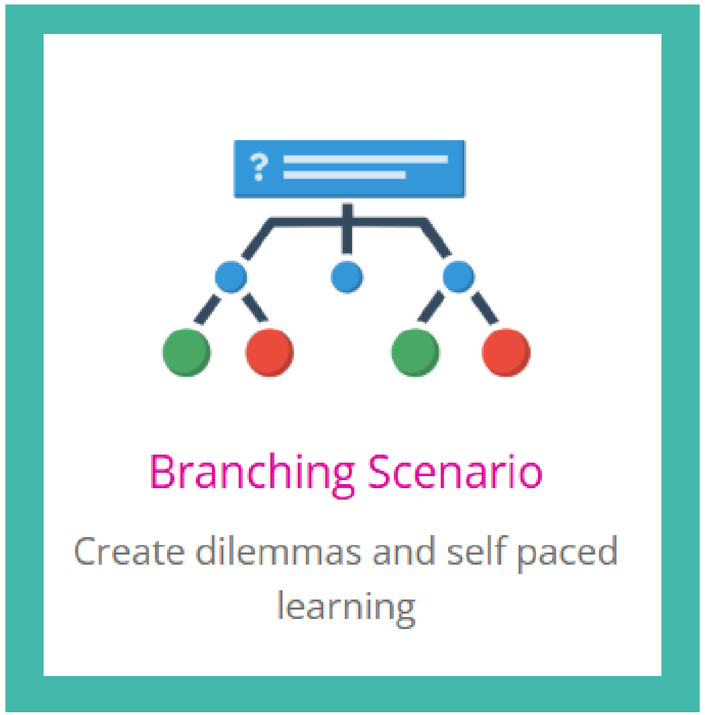
Interactions & Visuals

Triggering Reflection

Francesca Crudele

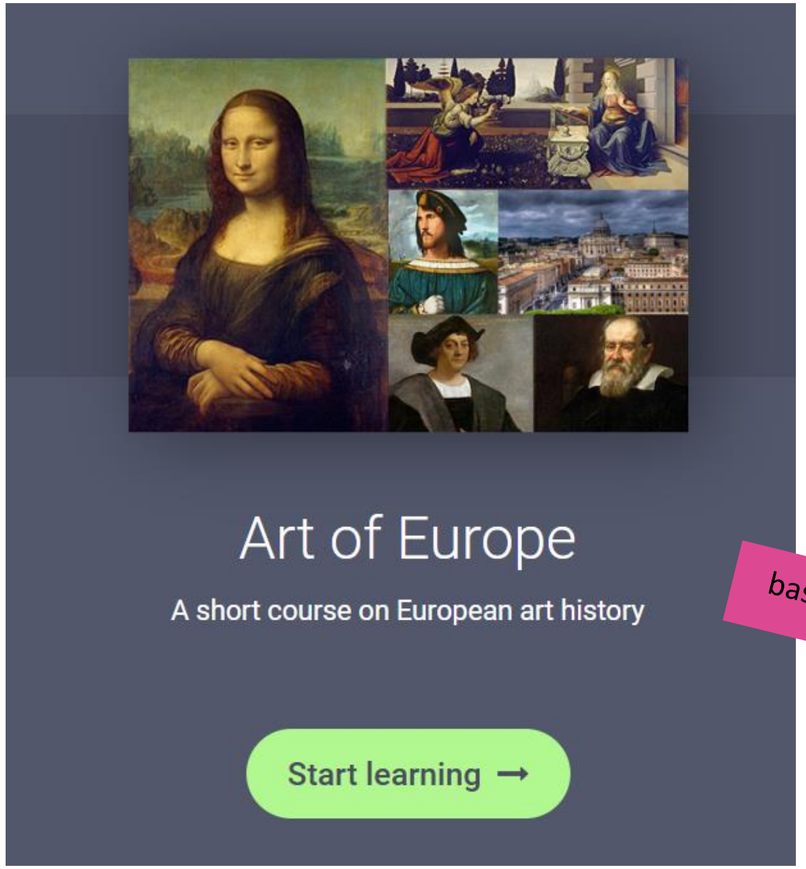
Try now to IMAGINE how to create it!

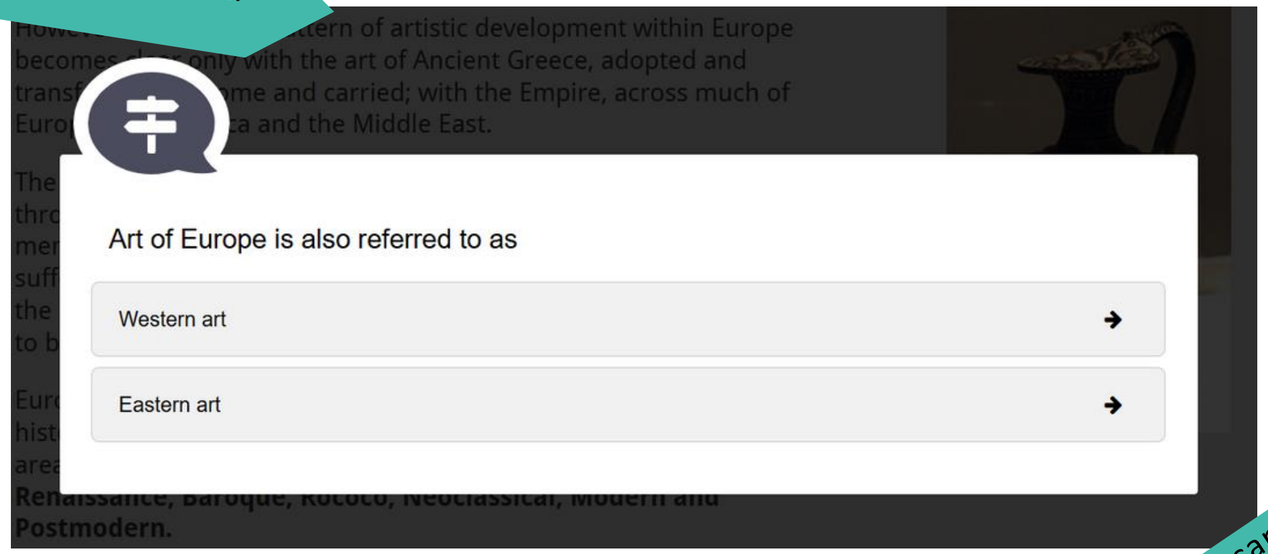
We can use H5P



And specifically, the Branching Scenario type

You can add different paths....



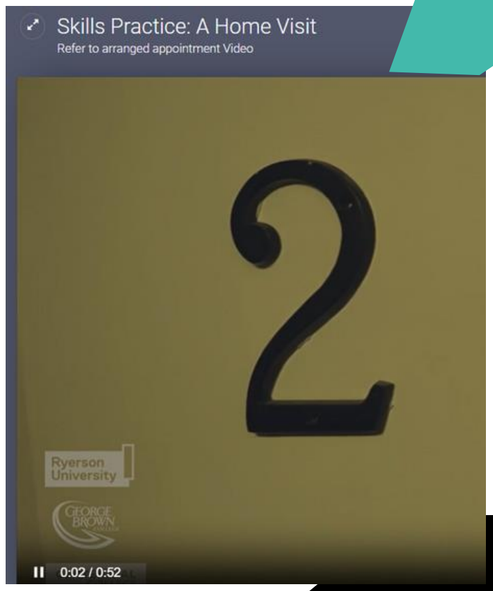


based on answers

Good answer!

No no no...

we can add videos or audios!

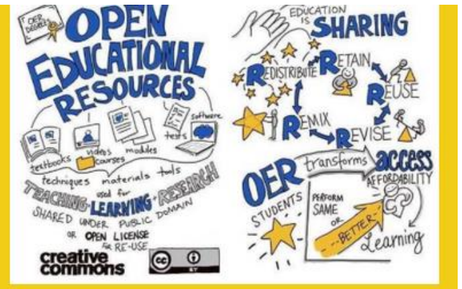


You can create self-paced course, like simulation game

We already used H5P in another project...

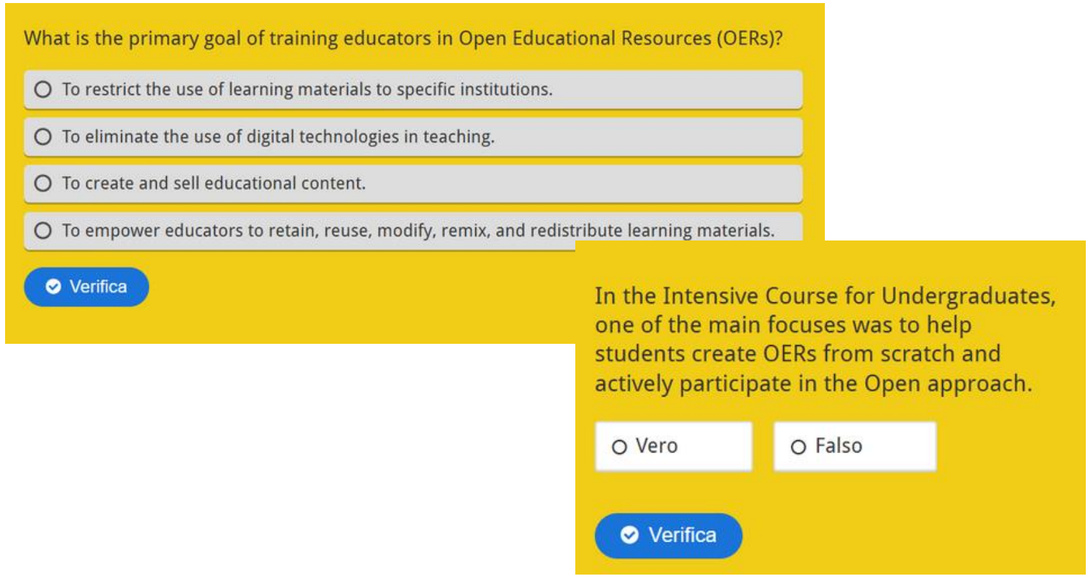
Why train at OERs?

Training educators in Open Educational Resources (OERs) is a transformative process that enhances teaching methods and democratizes education. OERs allow for the retention, reuse, modification, remixing, and redistribution of learning materials, fostering collaboration and creativity. By embracing open education, educators contribute to a shared knowledge ecosystem that ensures equitable access to high-quality resources for all learners.



What do we mean by Open Education?

Why focus on Digital, Green, Entrepreneurial Competencies?



to create an interactive presentation with pop-up, videos and different types of activities (true and false, multiple choices).

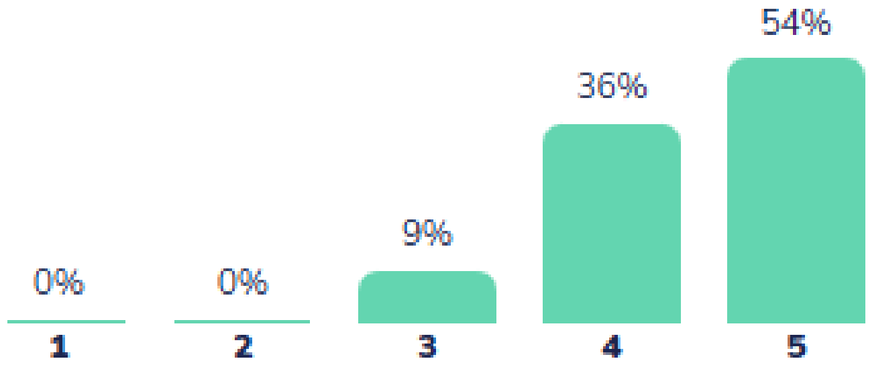
But we can do better!

To compare scores

1

We can think to embed visualization from Wooclap

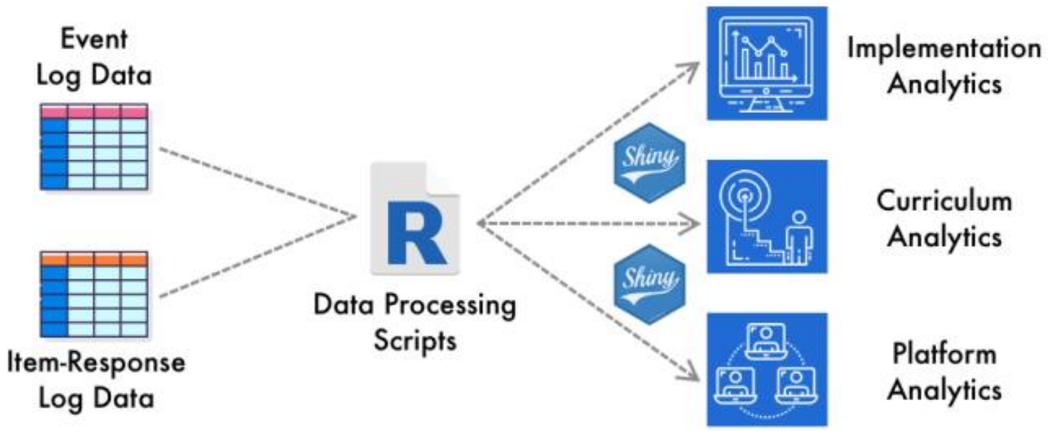
to see the overall results of others and reflect on your own situation based on them.

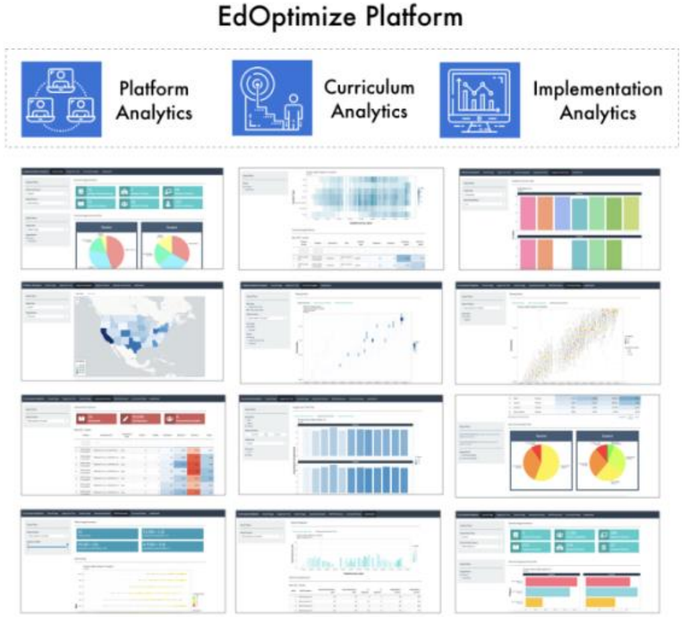


2

We can think of adding a graphical visualization from R

starting from data changing in real life -AMBITIOUS BUT POSSIBLE





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