

Teaching in the Digital Age: Will AI Teachers Replace Human Educators?



Oksana Strutynska, Researcher in LINE lab

oksana.strutynska@univ-cotedazur.fr

D.Sc. (in Pedagogical Sciences),
Researcher in LINE lab, University Cote D'Azur, Nice, France
Full professor, PhD, Department of IT and programming,
Dragomanov Ukrainian State University, Kyiv, Ukraine



Margarida Romero, ANR Creamaker PI

Margarida.Romero@univ-cotedazur.fr

Full professor, Université Côte d'Azur, Nice, France
Associate professor, Université Laval, Québec, Canada
<https://margaridaromero.me/>



The AI trends in 2024

- Generative AI (gen AI)
- Analytical AI
- Multimodal AI
- Shadow AI (and corporate AI policies)
- Explainable AI
- Regulation, copyright and ethical AI concerns

Source: McKinsey Global Institute (2024, May 30). *The state of AI in early 2024: Gen AI adoption spikes and starts to generate value*. URL: <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai>

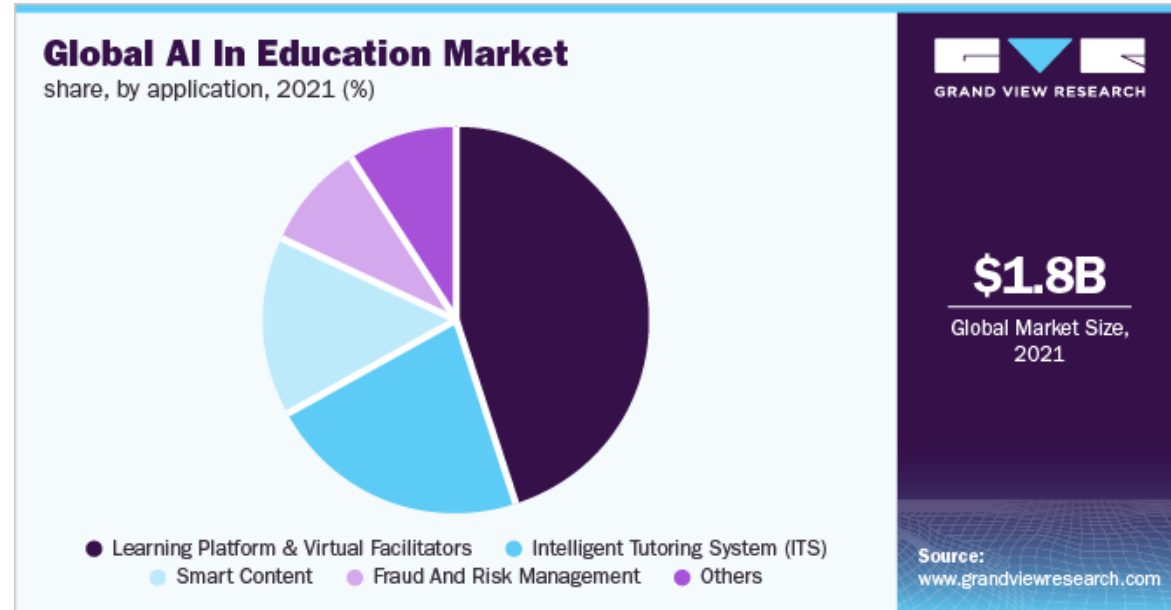
Source: IBM (2024, February 9). *The most important AI trends in 2024*. URL: <https://www.ibm.com/blog/artificial-intelligence-trends/>

Source: Ernst & Young (2023, December). *How organizations can stop skyrocketing AI use from fueling anxiety*. URL: https://www.ey.com/en_us/consulting/businesses-can-stop-rising-ai-use-from-fueling-anxiety



AI in education market

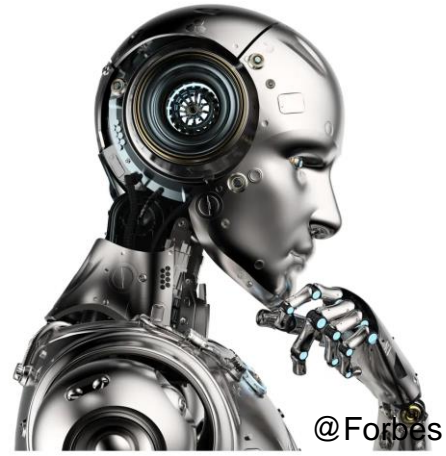
The **global AI in education market size** was valued at **\$1.82 billion in 2021** and is expected to expand at a compound annual growth rate (CAGR) of **36.0%** from **2022 to 2030** (Report by Grand View Research, 2021)





Will AI Teachers Replace Human Educators?

If yes how soon?



@Forbes





Mentimeter voting



Will AI Teachers Replace
Human Educators?



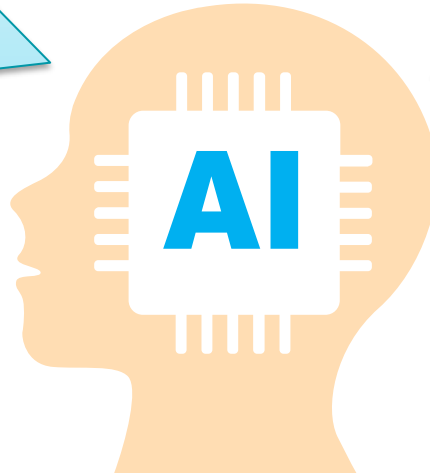
You can give your opinion
by voting



Opinions

Calculator didn't
replace
mathematicians.
So can you say in
the same way that
AI won't replace
humans?

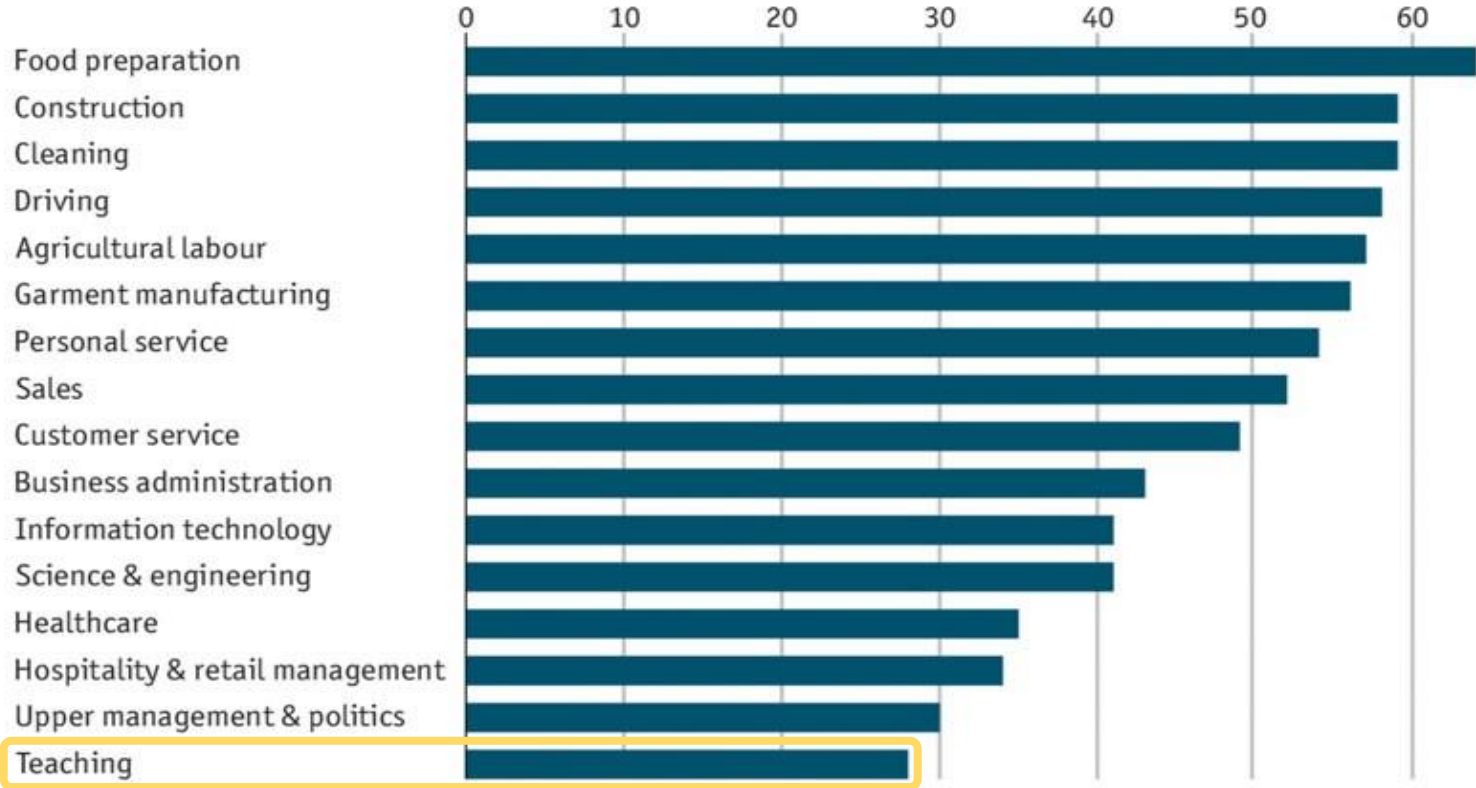
Education is about
shaping future
generations of critical
thinkers, empathetic
citizens, and
innovators. Can AI
support these models
to classroom?





Automated for the people

Automation risk by job type, %



Source: OECD

Source: OECD, WEF 2018





Will “Secondary Teacher” be Replaced By Robots?

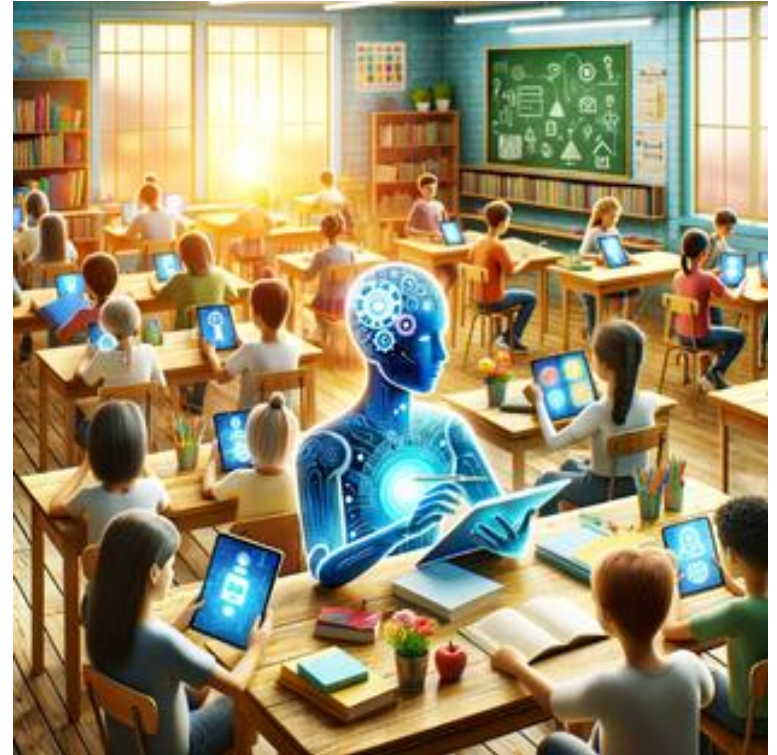


0.78% Chance of Automation

“Secondary Teacher” will not be replaced by robots.

- Pre-School teacher: 0%
- Primary teacher: 0.44%
- Secondary teacher: 0.78%
- University teacher: 3.2%

<https://www.replacedbyrobot.info/>



Source: Created by AI



Will AI Teachers Replace Human Educators?

We asked humans and AI
(NLP models)

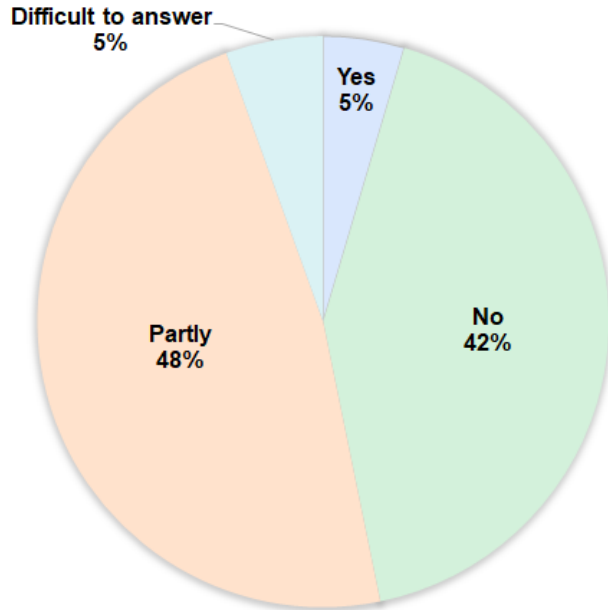
Results





Do you think AI systems will be able to replace teachers in the future? (109 participants during Summertime 2024, 79% of them are **educators**)

Humans



AI (NLP models)

ChatGPT 3.5

No, AI will complement rather than replace teachers

Mistral

Unlikely. AI is more likely to transform and augment their roles

Copilot

AI **won't completely replace** teachers. It's more about synergy between AI and teachers

Perplexity

Unlikely that AI will fully replace teachers in the future

Gemini

No, AI systems will not completely replace teachers in the foreseeable future

Claude

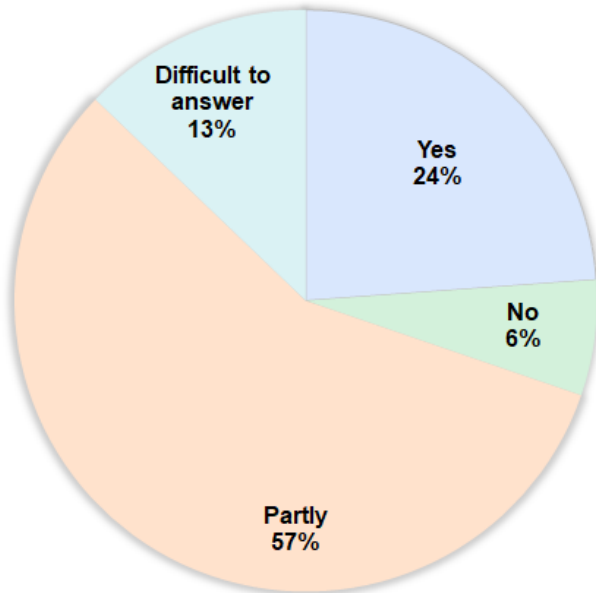
Unlikely that AI systems will fully replace teachers in the foreseeable future



Is it possible that in the coming years (e.g. by 2030), educational functions (or part of them) will be "able" to be performed by AI systems?

(109 participants during Summertime 2024, 79% of them are **educators**)

Humans



AI (NLP models)

ChatGPT 3.5

Yes, it is possible that by 2030, some educational functions will be "able" to be performed by AI systems

Mistral

Yes, it is possible that by 2030, many educational functions will be performed or assisted by AI systems

Copilot

Certainly! Advances in Artificial Intelligence (AI) are reshaping education, and by 2030, we can expect AI to play a significant role in various educational functions

Perplexity

Yes, it is possible that by 2030, AI systems will be able to perform certain educational functions

Gemini

Yes, it's highly probable that AI will play a significant role in educational functions by 2030

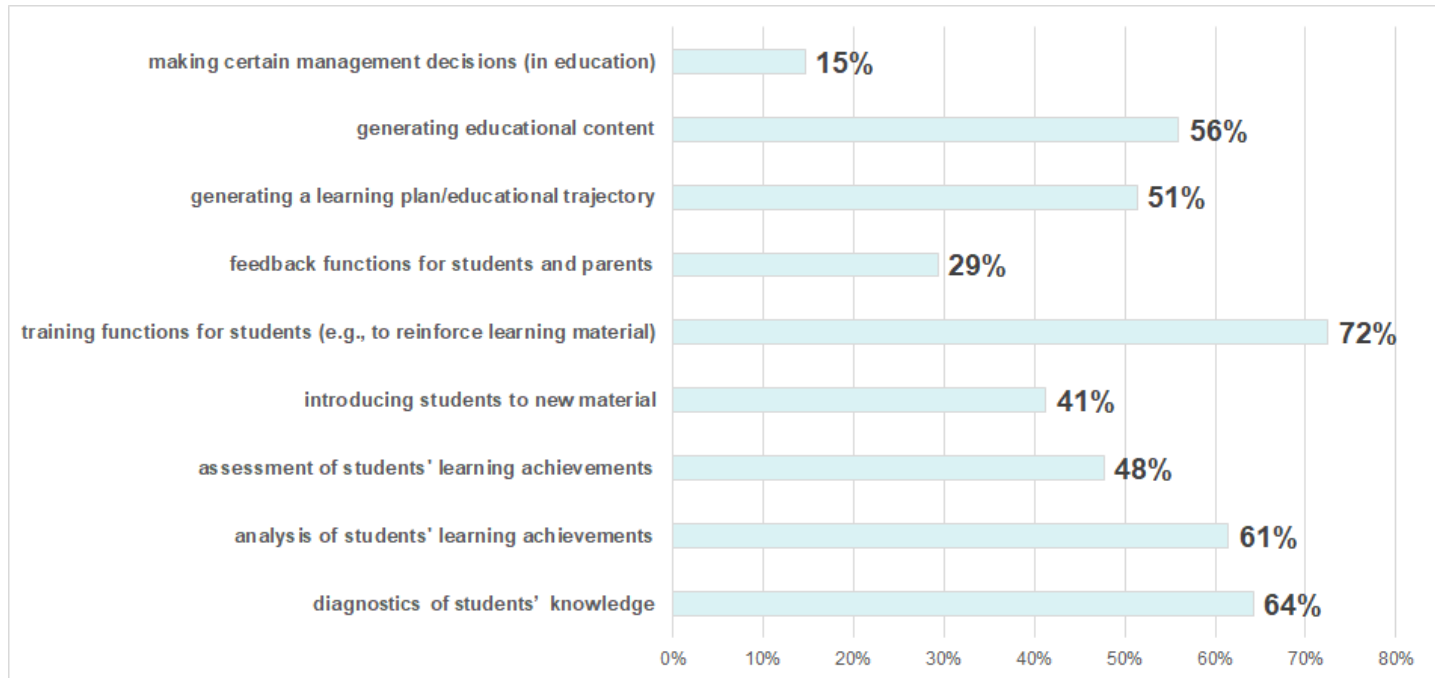
Claude

Yes, it's quite possible that by 2030, AI systems will be able to perform many educational functions or parts of them



What functions do you think a teacher (educator) could delegate to an AI-based system? (109 participants during Summertime 2024, **79%** of them are **educators**)

Humans





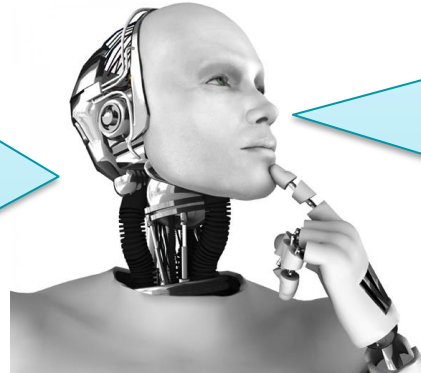
What functions do you think a teacher (educator) could delegate to an AI-based system? (6 NLP models)

AI
(NLP models)

	ChatGPT	Mistral	Copilot	Perplexity	Gemini	Claude
Automated Grading and Assessment						
Administrative Tasks						
Personalized Learning						
Tutoring and Remediation						
Content Creation and Curation						
Data Analysis and Reporting						
Communication and Engagement						
Accessibility and Inclusion						
Feedback and Recommendations						
Classroom Management						
Language Translation and Accessibility						
Adaptive Learning Platforms						
Intelligent Tutoring Systems						
Chatbots for Student Support						
Educational Games						
Homework assistance						
Language practice						
Routine communications						
Lesson planning assistance						



Opinions



Just as a calculator doesn't replace the need for understanding math, AI won't replace the need for human connection, adaptability, and guidance in the classroom

The future of education doesn't lie in sterile, roboticized classrooms, but rather a **balanced blend of human expertise and technological support**

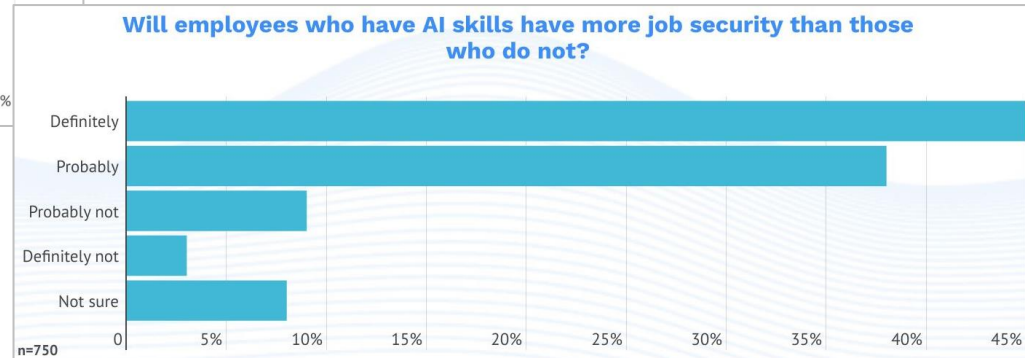
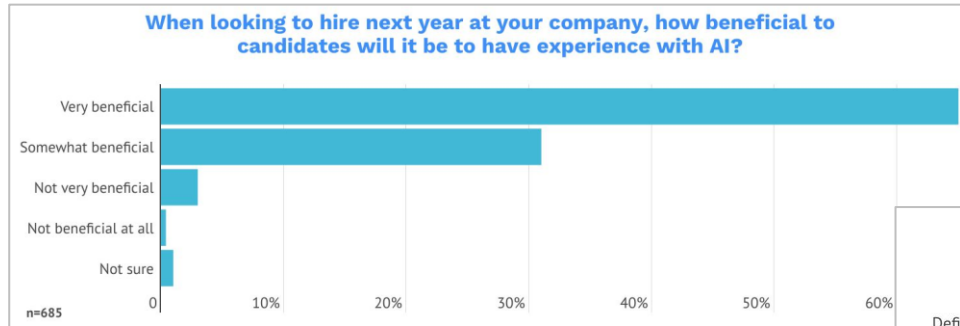
Hybrid Intelligence?

Synergy between AI and teachers?

Collaboration between AI and human expertise?



96% of companies will be looking for workers with AI skills (Resume Builder, 2023)





Opinions

The goal of AI in education should be to support teachers and enhance the learning experience for students, rather than replace them

However, it's important to note that while AI can assist educators, it cannot replace the human connection and empathy that teachers bring to the classroom



The role of the educator is to inspire and guide students, not just to impart information. The best way to utilize AI in education is as a tool that supports, not replaces, human teachers

The future of AI in education will be one of collaboration between technology and human expertise



**What are the
benefits to
train
educators in
using AI?**

New approaches to the educational process

Educators can bring creativity to teaching and learning by using AI and avoiding routine

AI Influencers

Educators can become leaders in the proper use of AI and teach students how to use AI correctly

Self-confidence

Educators will not be afraid to use AI tools and modern technologies



We can and need to integrate the study of AI in educators' training!!!



What are the **purposes**?



What is the **content**? (embed in other subjects or study as a separate subject)



What are the **AI tools** should we propose for studying? What are the purposes?

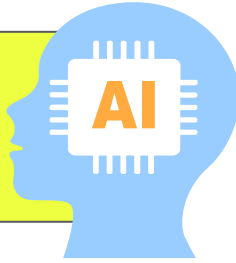


How can we support teachers in **designing of AI based learning activities**?





The possible directions of integration the **study** **of AI** in educators' training



Develop students' knowledge and skills in AI (**AI literacy**) to understand fundamental principles of AI and its potential in the field of AIED to improve decision-making processes in teaching and learning processes

Use of the open educational resources in **AI in Education** (AIED)

Create digital content supported by AI for professional purposes

Use **AI tools** to support personalised learning

Workshops and practical tasks and activities with **using AI tools** (i.e. for co(creative) problem solving)



What are the next our steps?

- ? What are the **purposes** of integrating the study of AI in educators' training?
- ? What is the **content** of the study of AI for educators training? (embed in other subjects or study as a separate subject)
- ? What are the **AI tools** should we propose for studying? What are the purposes of using these tools?

Answers to these questions will lead us
to new questions and new goals





Upcoming goals and research

- ! To identify relevant topics for training educators' in AI
- ! To study relevant resources, tools and practical cases in AI and AIED
- ! To define the relevant forms how to train educators' in AI (e.g. topics or modules as parts of other courses, separate course, practical tasks and activities, projects etc.)
- ! To design or/and update the curriculum(s) to train educators' in AI
- ! To design topics or modules as parts of other courses, separate course, practical tasks and activities, projects etc. to train educators' in AI

These research will lead us to new questions and new goals





AI won't replace educators, but
will support new practices for
those integrating it!





Let's bring AI to the classroom!!!

Our research team sharing
the goal to transform education
in the effective direction!





Google Form survey



You can join our
research and give your
opinion by participation
in survey

We are open for
cooperation!



Thank you for your attention!



I'm not a robot



reCAPTCHA

Prof. Oksana Strutynska

oksana.strutynska@univ-cotedazur.fr

Prof. Margarida Romero

Margarida.ROMERO@univ-cotedazur.fr

