

Empowering (?) learning with AI

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AI and society



AI and the human

AI and legislation

Educating for an understanding of AI

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"It would seem reasonable to hypothesize that if it would be possible to construct an artificial mind with the same complexity as the human mind it would be able to display similar creative abilities."

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"Den tekniska utvecklingen som kan prognostiseras framgent (till exempel den som orsakas av artificiell intelligens, AI) kommer sannolikt att slå mot något annorlunda grupper än den automatisering vi hittills har sett. Exempelvis kommer AI-teknologi antagligen att ersätta fler tjänstemannajobb, och därmed påverkas högutbildade i större utsträckning än vid tidigare teknologiskiften."
– Peter Fredriksson, Georg Graetz, Lena Hensvik & David Seim

"The technological developments that can be predicted in the future (for example, those caused by artificial intelligence, AI) are likely to affect slightly different groups than the automation we have seen so far. For example, AI technology is likely to replace more white-collar jobs, thus affecting highly educated people to a greater extent than in previous technological shifts."
– Peter Fredriksson, Georg Graetz, Lena Hensvik & David Seim

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 **Joanna Maciejewska—Snakebitten is on preorder now!** ...
@AuthorJMac

You know what the biggest problem with pushing all-things-AI is? Wrong direction.
I want AI to do my laundry and dishes so that I can do art and writing, not for AI to do my art and writing so that I can do my laundry and dishes.

12:50 PM · Mar 29, 2024 · **3M** Views

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 **isaac io schankler 🧠 (orb arc)** ...
@piesaac

Why isn't AI doing the tedious shit for creative people instead of the creative shit for tedious people

7:24 AM · Feb 17, 2024 · **4.7M** Views

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All future professionals need
an understanding of AI
...and skills in using AI...

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The image shows a screenshot of a news article from Dagens Nyheter. The article title is "Tre kreatörer om sitt AI-användande: 'Som att jag kan fotografera mina drömmar'". Below the title are three portrait photographs of the creators mentioned in the article. The article is dated "Uppdaterad 2024-09-12" and "Publicerad 2024-09-10". The website header includes navigation links for various categories like "Nyheter", "Sverige", "Världen", "Ekonomi", "Kultur", "Sport", "Klimatet", "Ledare", "DN Debatt", and "Meny". There is also a search bar and a weather widget showing "-6°".

(Arborelius, 2024)

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Human-AI challenges in education

Digital Divide

Not all students have equal access to the technology required to benefit from AI, which can exacerbate existing inequalities in education

Cost and Resources

Implementing AI solutions can be expensive and require significant resources, including technical expertise and ongoing maintenance



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(source: <https://www.skolverket.se/om-oss/aktuellt/nyheter/nyheter/2023-09-05-ai-i-skolan---risker-och-mojligheter>)

Education and AI

- Lärare behöver vara tydliga med vilka hjälpmedel som får eller inte får användas. Det är bra om skolor och lärare diskuterar hur skriftliga uppgifter kan utformas och genomföras. Det är också viktigt att skolor förklarar för eleverna om och hur chattrobotar får användas i skolarbetet. Om det finns en gemensam hållning på skolan kan det underlätta för både lärare och elever, säger Alper Yilmaz.

-Teachers need to be clear about which aids can or cannot be used. It is good if schools and teachers discuss how written assignments can be designed and implemented. It is also important that schools explain to students whether and how chatbots can be used in schoolwork. If there is a common stance at school, it can make things easier for both teachers and students.

- Alper Yilmaz

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General guidelines

Generative AI is an amazing technology that can support us in our writing. According to most journals and publishers, generative AI cannot be a co-author of a paper since the technology cannot take responsibility for the results it produces. Furthermore, from a legal point of view generative AI has tendencies to copy and parts of the results often get caught as plagiarism. The author is accountable for the accuracy of the final work and making sure that there is no plagiarism, it is therefore your responsibility what the generative AI has produced if you use it in your work.

Here is a recorded lecture on the use of [AI in the writing process](#).

Experience show that using generative AI as support in correcting spelling and grammar is successful as long as the texts used have been written by the author, i.e., the texts are original text.

The purpose of this course is to increase your understanding of the writing process and boost your confidence in creating a high quality report based on primary data. The process of writing and rewriting texts increase the understanding of the content and have a positive impact on learning both content and the process of creating reports. Writing is closely linked to reflection and analysis of the content and the collected data. Using generative AI to create texts affect the learning negatively.

How can generative AI be used during the course?

During the writing process (the draft stage)

Generative AI can be used as inspiration and a discussion partner.

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Outcomes Quizzes Rubrics Settings

Commons Help

text.

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- Generative AI *can be used* as inspiration and a discussion partner.
- Generative AI *can be used* to generate e.g., images based on your prompts.
- Generative AI *should not be used* for generating texts for the paper.

During the final editing stage (final paper)

- AI *can be used* for support to improve grammar and readability of the text you have written.
- AI *should not be used* for generating new texts.

Full disclosure in the methods chapter

If generative AI has been used in any stage or for any purpose in the research or writing process, you should fully disclose how it has been used in the methods chapter.

- Which tools have been used and how have they been used?
- What known biases may exist with the AI tools used?
- What aspects of the paper have the AI assisted with?
- What kind of modifications etc. to the AI generated content have been done?
- Make necessary [references to the AI tools](#) used in the reference list.

If anything is unclear, discuss with your supervisor.

(created: 2024-09-13, updated: 2025-03-28)

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“We don’t know if the background is based on a photo that someone might claim copyright on... and we have no way of finding out.”
– Respondent on the use of AI generated images in the creation process

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(source: <https://www.vitsoe.com/us/about/good-design/>)

1. Good design is innovative
2. Good design makes a product useful
3. Good design is aesthetic
4. Good design makes a product understandable
5. Good design is unobtrusive
6. **Good design is honest**
7. Good design is long-lasting
8. Good design is thorough down to the last detail
9. Good design is environmentally-friendly
10. Good design is as little design as possible

Dieter Rams
Head of Design at Braun 1961-1997

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How do we educate our students to create honest work?

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(Cullinane, 2018)

Monkey selfie copyright dispute



A series of selfies was taken in 2011 by a macaque in Indonesia with the camera of David John Slater

1. Slater claimed copyright
2. PETA sued of behalf of the monkey in the US

=> After a series of court rules:

Non-humans cannot have copyright

“Our court’s precedent requires us to conclude that the monkey’s claim has standing under Article III of the United States Constitution. Nonetheless, we conclude that this monkey – and all animals, since they are not human – lacks statutory standing under the Copyright Act.1 We therefore affirm the judgment of the district court”

– Judge Carlos Bea

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Non-humans cannot have copyright

AI is not human!

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(Brittain, 2023; Fitzpatrick, 2025; Savare, Sterba & Cassidy, 2023)
(image source: Fitzpatrick, 2025)

Copyright of AI generated works



In the US AI generated work cannot be protected under copyright (or similar protection).

However, if the work has been manipulated by a human in a "sufficiently creative", the manipulated work can be considered for copyright protection.

Nevertheless, the underlying AI-only generated work is not protected.

Copyright protects the original expression in a work created by a human author, even if the work also includes AI-generated material.

U.S. Copyright Office

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Copyright of AI generated works

The (free) use of AI generated work is governed by the terms of use on the platform that is used.

Works are free for *anyone* to use, and not only you.

Ownership of content. As between you and OpenAI, and to the extent permitted by applicable law, you (a) retain your ownership rights in Input and (b) own the Output. We hereby assign to you all our right, title, and interest, if any, in and to Output.

openai.com

Code of Ethics (example from ACM Code of Ethics and Professional Conduct)

1.5 Respect the work required to produce new ideas, inventions, creative works, and computing artifacts.

Developing new ideas, inventions, creative works, and computing artifacts creates value for society, and those who expend this effort should expect to gain value from their work. **Computing professionals should therefore credit the creators of ideas, inventions, work, and artifacts, and respect copyrights, patents, trade secrets, license agreements, and other methods of protecting authors' works.**

Both custom and the law recognize that some exceptions to a creator's control of a work are necessary for the public good. Computing professionals should not unduly oppose reasonable uses of their intellectual works. Efforts to help others by contributing time and energy to projects that help society illustrate a positive aspect of this principle. Such efforts include free and open source software and work put into the public domain. Computing professionals should not claim private ownership of work that they or others have shared as public resources.

Full transparency!

Best practice is to have *full transparency* of the use of generative AI. Most organizations recommend (or demand) full disclosure of the use of AI for e.g., publication.

But in this new reality, it will be up to writers to establish trust in the provenance of their own gems by being transparent about their labour to mine them. Pretending that writing is too honourable a craft to worry about trust is, I believe, naive.



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Full transparency!



Authors should disclose in their manuscript the use of generative AI and AI-assisted technologies and a statement will appear in the published work. Declaring the use of these technologies supports transparency and trust between authors, readers, reviewers, editors, and contributors and facilitates compliance with the terms of use of the relevant tool or technology. This policy is intended to cover new content creation only (i.e., new works or new content or chapters added to a revised work). Generative AI and AI-assisted technologies should not be used on previously published material.

The Guardian

For the benefit of readers
For the benefit of our mission, our staff and the wider organisation
With respect for those who create and own content

For the benefit of readers

GenAI tools are exciting but are currently unreliable. There is no room for unreliability in our journalism, nor our marketing, creative and engineering work. At a simple level, this means that the use of genAI requires human oversight. We will seek to use genAI tools editorially only where it contributes to the creation and distribution of original journalism. We will guard against the dangers of bias embedded within generative tools and their underlying training sets. If we wish to include significant elements generated by AI in a piece of work, we will only do so with clear evidence of a specific benefit, human oversight, and the explicit permission of a senior editor. We will be open with our readers when we do this.



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Full transparency!

Some publishers (e.g., Springer Nature) do not allow the use of AI generated images in its journals.

Generative AI images

The fast moving area of generative AI image creation has resulted in novel legal copyright and research integrity issues. As publishers, we strictly follow existing copyright law and best practices regarding publication ethics. While legal issues relating to AI-generated images and videos remain broadly unresolved, Springer Nature journals are unable to permit its use for publication.

nature

Generative AI Copyright Disclosure Act (US, 9 April 2024)

US legislation introduced to support transparency of the material used for training of the AI

A notice needs to be submitted to the Register of Copyrights

The notice must include a list of all copyrighted works used for training

“Everything generated by AI ultimately originates from a human creative source. That’s why human creative content-intellectual property-must be protected,” said Duncan Crabtree-Ireland, SAG-AFTRA’s national executive director and chief negotiator.

Human-AI challenges in education

Ethical Concerns and Bias

AI systems can inadvertently perpetuate biases present in their training data, leading to unfair or discriminatory outcomes. Ensuring ethical use and addressing these biases is crucial

Reliability and Accuracy

AI tools can sometimes provide incorrect or misleading information, which can be problematic in an educational setting



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(source: <https://www.ntu.edu.sg/education/inspire/teaching-learning-assessment-with-genai/assessment/policies-guidelines>)

AI detection tools

Use of AI Detector Tools

Research shows that the use of AI detector tools should be used with caution due to the following reasons.

Unreliable Detection:

- Frequent false positives (human text flagged as AI) and false negatives (AI text missed).
- Detectors rely on patterns that are not unique to AI-generated text.
- Easy for students to bypass detectors using minor text modifications or paraphrasing tools.
- The mixing of human and AI-generated training data further complicates accurate detection.

Discrimination:

- Bias against non-native writing patterns (e.g. ESL/EFL students).

Undermining Educational Goals:

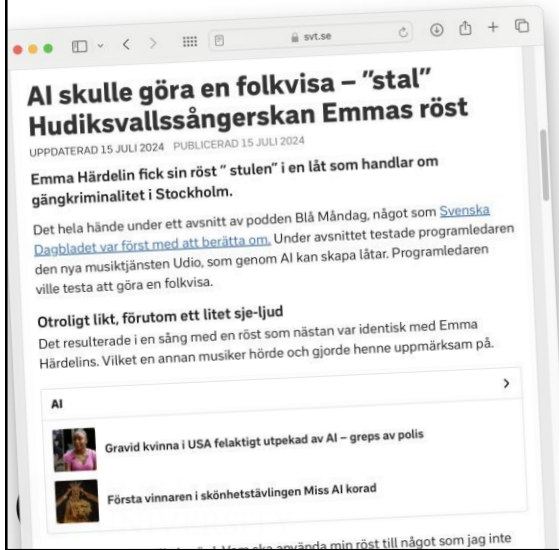
- Detectors lead to false accusations and hinder teaching of future-relevant skills.

Bauschard argues that educators should shift focus from unreliable AI writing detectors to training students and teachers on responsible AI tool usage, preparing students for real-world applications.

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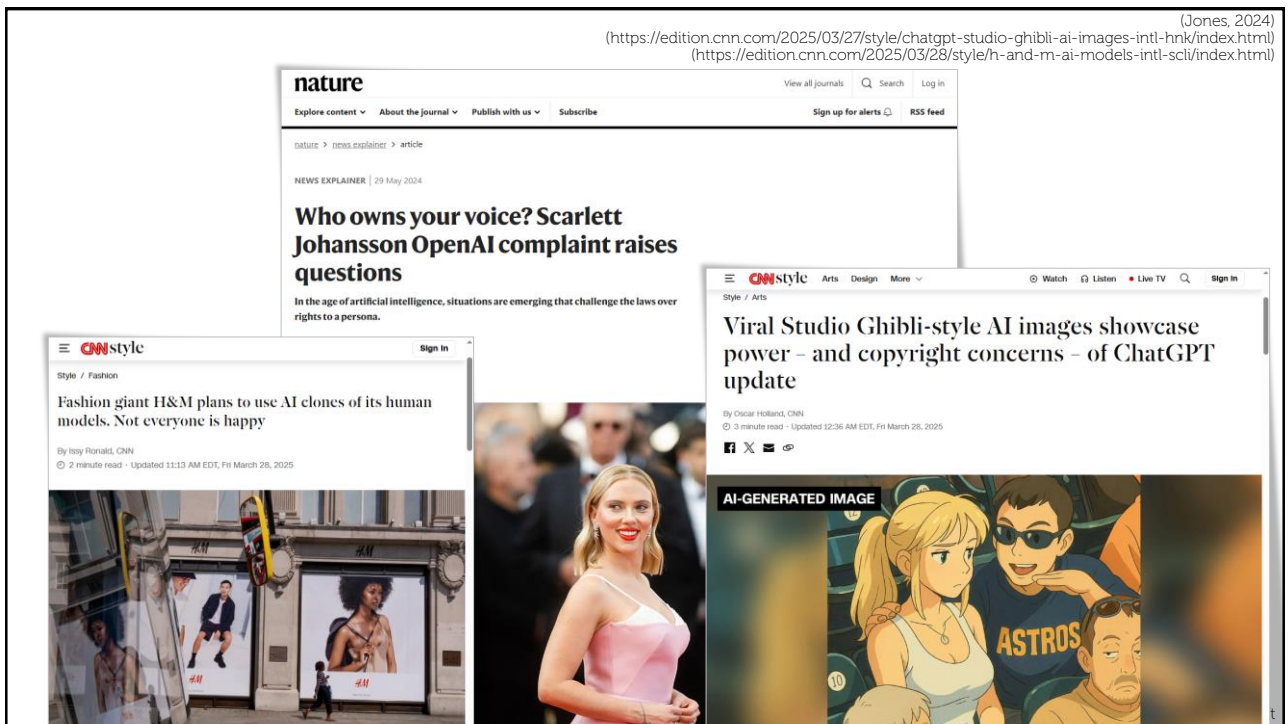
AI, training, and human creators



"Röststöld" befinner sig i en gråzon
Att använda någon annans röst är i nuläget inte lagreglerat. Under 2026 ska EU lämna direktiv/lagförslag. Det ska förhoppningsvis kunna ge klarhet i frågan.

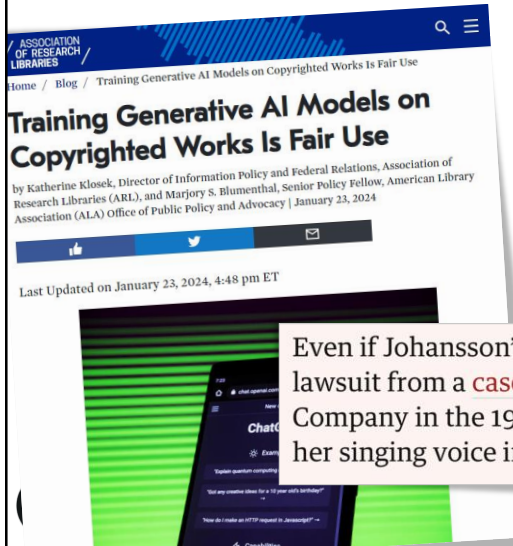
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AI, training, and creators



Data mining *is* fair use and not copyright infringement (e.g., Klosek & Blumenthal, 2024; Quang, 2021)

Even if Johansson's voice was not used directly, there is precedent for a lawsuit from a **case brought by the singer Bette Midler** against the Ford Motor Company in the 1980s, which had used a Midler impersonator to replicate her singing voice in a commercial. Midler won in the US court of appeals.

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The bottom line: "Copyright law is not really the way to worry about the big societal effects" of AI, Grimmelman tells Axios. "We shouldn't be using copyright law as labor policy to figure out the role of humans in a world of automation. We shouldn't be using copyright law to protect privacy or to protect against dangerous content. A copyright was not built for that."

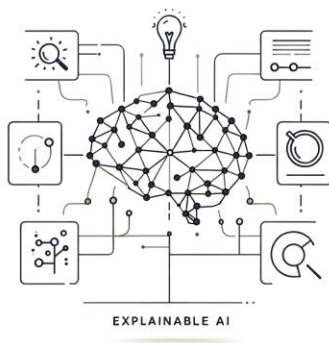
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Explainable AI



Explainable AI refers to methods and techniques that make the decision-making processes of AI systems understandable to humans

Transparency

Helps users to understand how decisions are made.

Trust

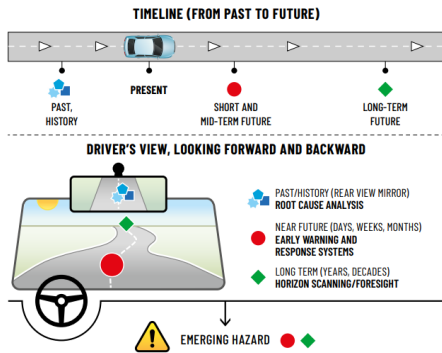
Building trust for the AI system by providing clear explanations.

Accountability

Ensure that decisions can be verified, and that the AI system (and the people behind) can be held accountable

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AI capabilities in user interfaces in education (examples)



- Personalized learning with tailored content based on previous interactions
- Enhanced and personalized accessibility for students that need support
- Increased accuracy of support and assistance
- Insights to teachers, students, and parents
- Predictive systems and personalized interventions (early warning systems)
- Natural interactions - Using natural language processing to understand and respond to users (including gestures, voice etc.)



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Human-AI challenges in education

Data Privacy and Security

The use of AI often involves collecting and analyzing large amounts of student data, raising concerns about privacy and data security

Professional Development

Educators need proper training and support to effectively integrate AI into their teaching practices



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Commons

Help

Outcomes ↗

Quizzes ↗

Rubrics ↗

Settings

text.

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(created: 2024-09-13, updated: 2025-03-28)

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(source: <https://dictionary.cambridge.org/dictionary/english/conversation>)

conversation

noun [C or U] • UK 🔊 /ˌkɒn.vəˈseɪ.ʃən/ US 🔊 /ˌkɑːn.vəˈseɪ.ʃən/

★ **A1** (a) talk between two or more people in which thoughts, feelings, and ideas are expressed, questions are asked and answered, or news and information is exchanged:

*She **had** a strange conversation **with** the man who moved in upstairs.*

*It's impossible to **hold/carry on** a conversation with all this noise going on!*

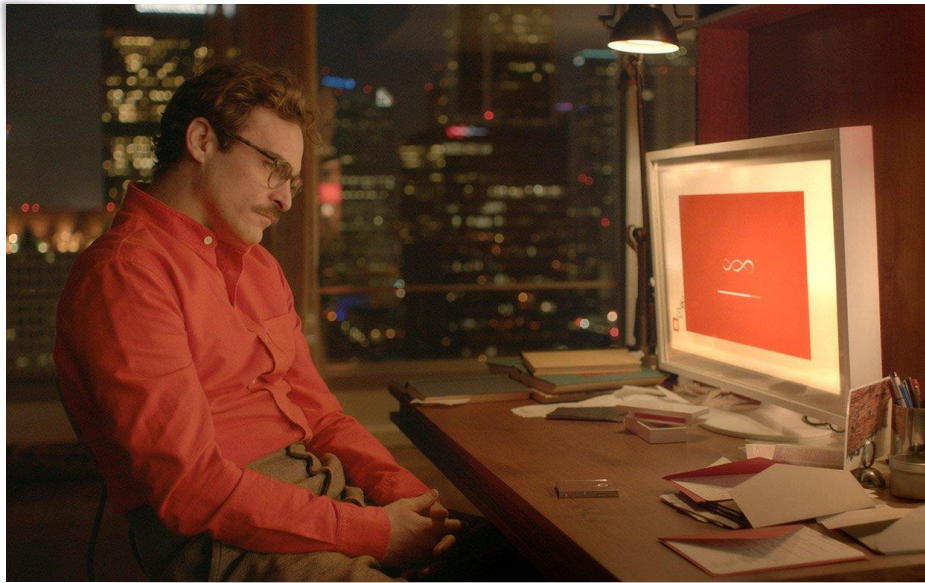
*I **struck up** (= started) an interesting conversation **with** your uncle.*

Because of television, many people have lost the art of conversation (= talking to each other).

*Whenever I'm in a social situation with my boss, we seem to **run out of** conversation (= things to say to each other) after two minutes!*

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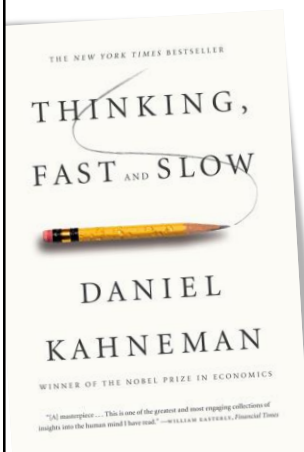
Human thinking vs. AI "thinking"

Fast thinking

Fast – Unconscious – Associative – Automatic

Slow thinking

Slow – Conscious – Logical – Reflective



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AI tends to keep us in fast thinking

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(image created using Dall-E 3)

Human-AI challenges in education

Reflection

AI may hinder students' development of reflective thinking skills by providing a fast dialogue with instant answers, reducing opportunities for deep, self-guided analysis and critical reflection.



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Thanks for listening! Let's talk!

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