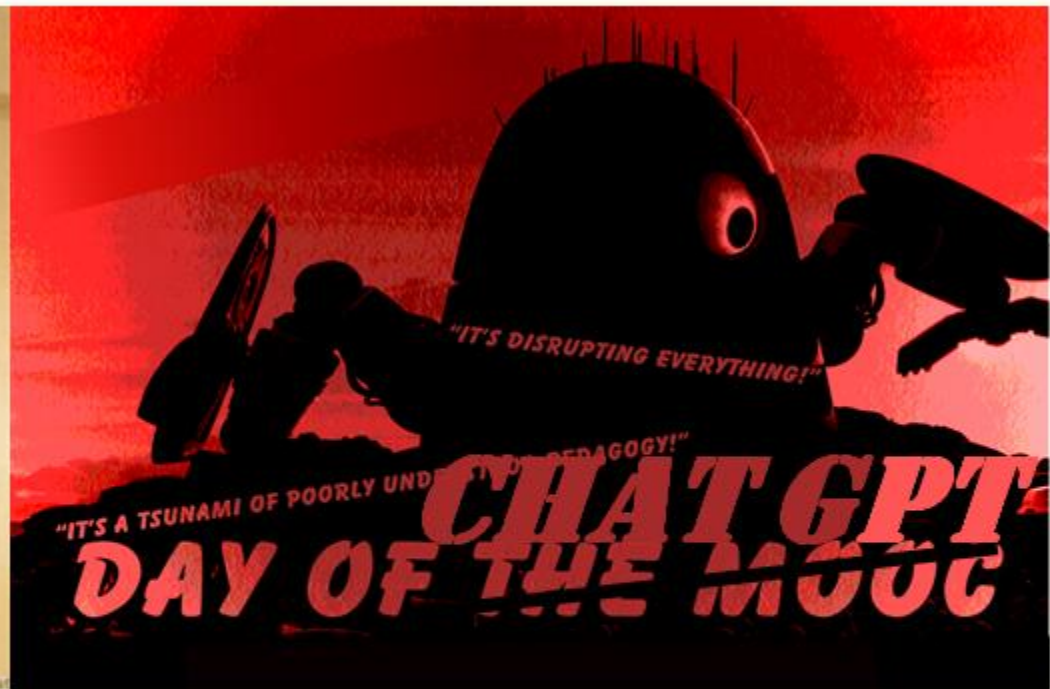


Generative artificial intelligence and OER: a blessing or a big risk?

Informationsveranstaltung ORCA.nrw

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2012

The Year Of The MOOC

2023

The Year Of ChatGPT?

Agenda

- What are we talking about?
- Potential advantages
- Potential risks & ethical issues
- Consequences
- Some questions to discuss about

What are we talking about?

Open Educational resources

Open Educational Resources (OER) are

- learning, teaching and research materials
- in any format and medium
- that reside in the public domain or are under copyright
- that have been released under an open license that permit
- **no-cost access,**
- **re-use, repurpose, adaptation and redistribution**
- by others

Open Educational Practices / Open Pedagogy

- Open Educational Practices are defined as practices which **support the (re)use and production of OER** through institutional policies, **promote innovative pedagogical models**, and respect and empower **learners as coproducers** on their lifelong learning path
- Open Pedagogy is a collection of characteristic activities related to **working in open networks** and the **use of open educational resources** where the student has a central role in **assessing, creating and sharing** information

Generative Artificial Intelligence (Gen-AI)

Generative AI (Gen-AI) is

- an Artificial Intelligence (AI) technology
- that automatically generates content
- in response to prompts
- written in natural language conversational interfaces.

Symbolic AI vs machine Learning

AI VERSUS MACHINE LEARNING

AI	MACHINE LEARNING
Intelligence demonstrated by machines, similar to the natural intelligence displayed by humans	Scientific study of algorithms and statistical methods that computer systems use to perform a specific task effectively without using explicit instructions
Focuses on mimicking the intelligent behavior similar to a human	Focuses on identifying the hidden patterns and to improve the accuracy of prediction

E.g. Rule-based systems
(Expert systems)

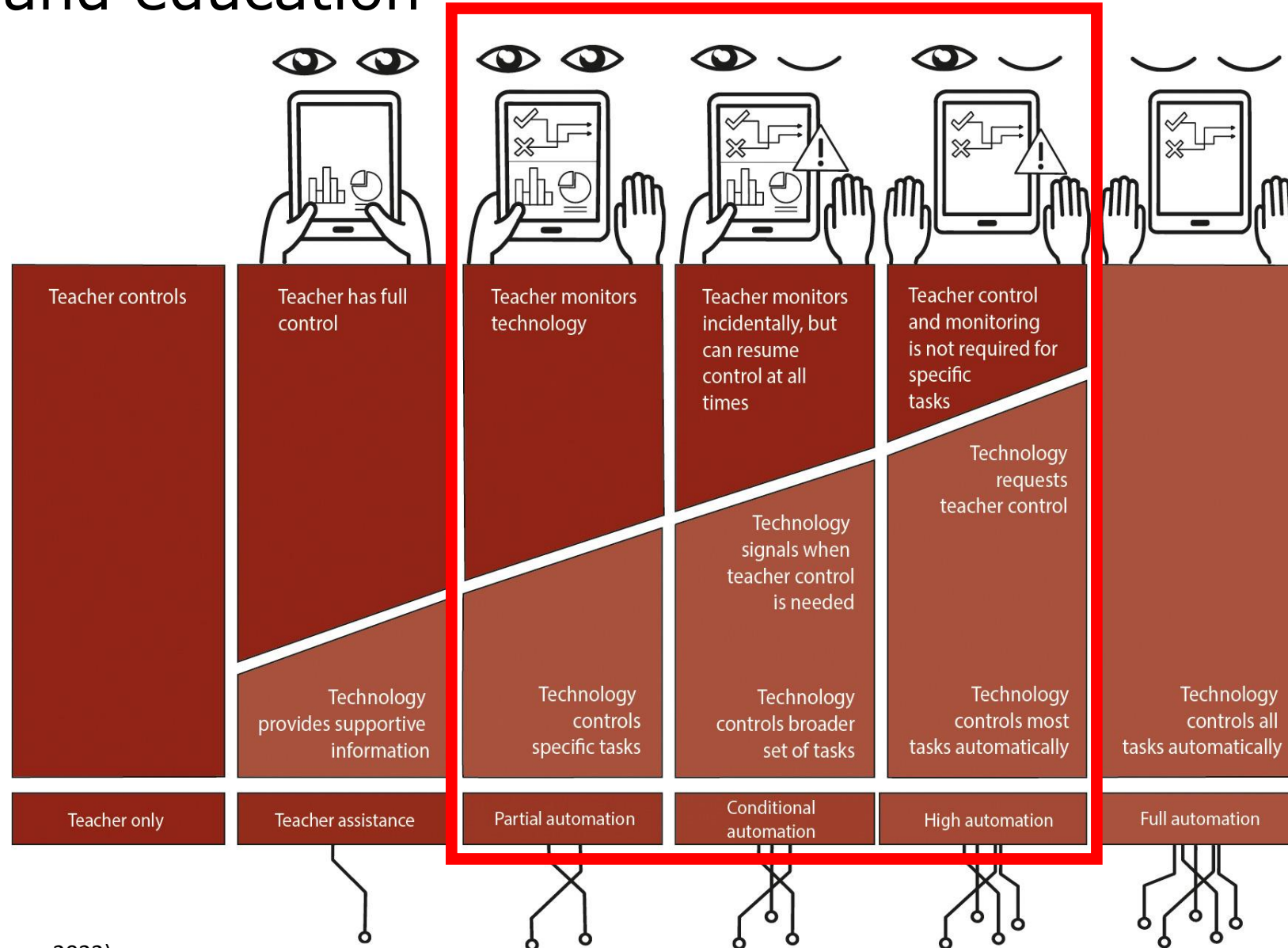
E.g. Large Language Models

Visit www.PEDIAA.com

<https://pediaa.com/what-is-the-difference-between-ai-and-machine-learning/>



AI and education



(Molenaar, 2022)

© Anne Horvers & Inge Molenaar, Adaptive Learning Lab.





Potential advantages

Potential of (Gen-)AI in OER and Open Educational Practices (OEP)

- Automatic content generation
 - OER as set of prompts
- Resource curation
- Enhance findability of OER
 - Automatic metadata generation
- Updating existing resources
 - Translation, localisation
- Facilitating adaptive learning with OER
 - Learning analytics (partial automation)
 - Automated feedback (conditional automation)
- Co-creation OER
- Facilitating collaborative learning in OEP

How does ChatGPT think about this?

MA

What do you think of the relationship between OER, open education in general and AI (and you ChatGPT)?




As an AI language model, I believe that Open Educational Resources (OER) and open education in general can greatly benefit from the integration of AI technologies. AI can help in creating more personalized and adaptive learning experiences for students, by analyzing their learning behaviors and adapting the content and pacing of instruction to their individual needs. AI-powered tools can also help in automating certain tasks, such as grading and assessment, freeing up more time for teachers to focus on teaching and providing feedback to their students.




Moreover, OER and open education can also play an important role in the development and training of AI systems. By making educational resources open and accessible, researchers and developers can use them to train and test AI models, making them more robust and accurate. Additionally, OER can help in democratizing access to AI education and training, by providing free and accessible resources to learners around the world.

As for myself, ChatGPT, I see myself as a tool that can assist in the creation and dissemination of OER and open educational resources in general. I can help in generating high-quality educational content, answering questions and providing explanations to learners, and even in providing personalized recommendations and feedback based on the learner's individual needs and preferences.

(From webinar Encore+, 5 December 2023)

 **You**
What do you think of the relationship between OER, open education in general and AI (and you ChatGPT)?

 **ChatGPT**
The relationship between Open Educational Resources (OER), open education, and AI, including ChatGPT, is quite fascinating. Open education aims to make education accessible to everyone, breaking down barriers to learning by providing resources that are freely available and adaptable. OER plays a crucial role in this by offering educational materials that can be accessed, used, and shared without restrictions.

AI, including ChatGPT, intersects with open education in several ways:

1. **Accessibility:** AI-powered tools like ChatGPT can enhance accessibility by providing personalized learning experiences. They can adapt to individual learning styles, offer explanations, and engage learners in a conversational manner.
2. **Content Creation and Curation:** AI technologies can aid in creating and curating OER. They can assist educators in developing high-quality educational content, generating quizzes, summarizing information, and recommending relevant resources.
3. **Translation and Localization:** AI can facilitate the translation of educational materials into multiple languages, making them accessible to a broader audience worldwide.
4. **Adaptive Learning:** AI-powered systems can analyze learners' performance and behaviors to provide adaptive learning experiences, offering customized content and recommendations based on individual progress.
5. **Support and Assistance:** ChatGPT and similar AI models can serve as virtual assistants, providing instant help and guidance to learners, answering questions, explaining concepts, and offering support in real-time.

However, challenges exist, such as ensuring the quality of AI-generated content, addressing biases, and maintaining data privacy and security.

Overall, AI can significantly contribute to the advancement and accessibility of open education and OER by offering innovative tools and solutions, but it's crucial to ensure that these technologies are utilized ethically and responsibly to serve the diverse educational needs of learners globally.

Same question, several days later



Potential risks & ethical issues

Potential risks and challenges

- Copyright issues
- EDI (Equality, Diversity, Inclusivity) principles under pressure
 - Language
 - Bias
- Too much power for Big Tech
- Data privacy

How does ChatGPT think about this?



You

What do you think about the risks of applying you, chatgpt, for OER and open education in general?



ChatGPT

Using AI, like ChatGPT, for Open Educational Resources (OER) and open education holds both promise and risks. On the positive side, AI can enhance learning experiences, offering personalized assistance, generating content, and aiding in understanding complex concepts. However, here are some potential risks:

1. **Bias and Accuracy:** AI models, including ChatGPT, might inadvertently contain biases present in the data they were trained on. In educational settings, this could perpetuate or amplify existing biases, leading to misinformation or limited perspectives.
2. **Quality Control:** There's a risk that AI-generated content may lack accuracy or comprehensiveness, impacting the quality of educational resources. Human oversight and fact-checking become crucial to maintain high standards.
3. **Ethical Concerns:** Utilizing AI in education raises ethical considerations, especially regarding data privacy, consent, and the responsibility to protect students' information.
4. **Dependency and Creativity:** Over-reliance on AI for content creation might limit creativity and critical thinking in both educators and learners, hindering diverse learning experiences.
5. **Accessibility and Inclusivity:** AI tools might not be equally accessible to all due to technological barriers or limitations in languages and dialects, potentially excluding certain groups from benefiting fully.
6. **Lack of Emotional Intelligence:** AI lacks emotional intelligence, empathy, and human connection crucial for certain aspects of teaching and learning, such as mentorship and emotional support.

Suggestion from ChatGPT

To mitigate these risks, a balanced approach is essential. Incorporating AI into open education should involve:

- **Human Oversight:** Ensure human review and oversight to verify accuracy, quality, and fairness in AI-generated content.
- **Diversity in Data:** Ensuring diverse and representative datasets to minimize biases and enhance inclusivity.
- **Ethical Guidelines:** Establishing clear ethical guidelines and regulations to govern AI's use in education, focusing on privacy, consent, and transparency.
- **Teacher Training and Support:** Educating educators about AI's capabilities, limitations, and ethical considerations to empower responsible integration into teaching practices.
- **Accessible Design:** Striving for AI tools and content to be accessible to diverse learners, considering different languages, abilities, and learning styles.

AI can undoubtedly transform education positively, but careful consideration of these risks and proactive measures can help maximize its benefits while minimizing potential downsides in open education.

Seven principles of Creative Commons

1. Legal space for studying and creating should accommodate generative AI while addressing societal concerns.
2. Defining ways for creators to express preferences on AI training, with opting out as the maximum legislative restriction, due to extensive copyright protection and lack of active management.
3. Collaborative efforts needed to address implications beyond copyright, considering rights like data protection and likeness use.
4. Special focus on using traditional knowledge for AI training, involving community stewardship for authorization.
5. Legal frameworks should permit using copyrighted works for non-commercial public interest, like research and education.
6. Ensure shared economic benefits from AI access to copyrighted works, benefiting all contributors to the commons.
7. Counter resource concentration by investing in public computational infrastructures globally and supporting training datasets respecting outlined principles as commons.

(Creative Commons, 2023) (Summarized by ChatGPT)





Consequences

Competences needed!

- UNESCO effort toward competency frameworks for teachers and students
- Objectives:
 - Teacher: define the knowledge, skills and attitudes that teachers should possess to understand the roles of AI in education and utilize AI in their teaching practices in an ethical and effective manner
 - Student: articulate the knowledge, skills and attitudes students should acquire to understand and actively engage with AI in a safe and meaningful manner in education and beyond
- Publishing foreseen in Digital learning week 2024

Competences needed for teachers

Aspects	Progression		
	Acquisition	Deepening	Creation
Human-centred Mindset	Benefit-risk analysis	Human accountability	AI society responsibility/ Social human agency
Ethics of AI	Ethical principles	Safe and responsible uses	Co-creating commons of AI ethics
AI Foundations & Applications	Basic AI technique and applications	Application skills	Creating with AI
AI Pedagogy	AI-assisted teaching	AI-pedagogy integration	AI-enhanced pedagogical transformation
AI for Professional Development	AI as enabler of lifelong professional learning	AI to enhance organizational learning	AI to support professional transformation

Competences needed for students

Aspects	Progression		
	Understand	Apply	Create
A human-centred mindset	Human Agency	Human Accountability	Citizenship in the AI Era
Ethics of AI	Critical Reflections on AI	Safe and Responsible Use	Ethics by Design
AI techniques and applications	AI Foundations	Application Skills	Creating with AI
AI system design	Problem Scoping	Architecture Design	Iteration and Feedback Loops



Some questions to discuss about

Suggestions for further discussion

- Are the risks and challenges outperforming the opportunities?
- In the Netherlands, an LLM will be developed (funded by the government), safeguarding public values. The EU has a similar plan. What do you think about these initiatives?
- What would be next steps for a fruitful application of AI for OER?



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Colophon

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