

Ethical Education and Artificial Intelligence (ED&AI): The Challenges for Teaching and Learning Design

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Rheinische Friedrich-Wilhelms-Universität Bonn

Talk and discussion on 4th of November 2026 in Bochum
at the Center for Advanced Internet Studies (CAIS)

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https://opening-up.education

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About Myself

Coordinator ED&AI and Open Education, University of Bonn

Adjunct Professor, Korean National Open University

Advisory Professor, East China Normal University

Founder & Director, European Research Institute eLC

100+ research projects with 55+ Mio. € budgets

200+ scientific publications incl. 100+ peer-reviewed / SSCI

Creative design & training for 15,000 teachers & 5,000 schools

Elected Chair of ISO & CEN Standardization Committees



Selected Awards

"Artificial Intelligence and Education Expert Group" Member appointed by the Council of Europe (CoE) since 2023



"Martin Wolpers' Lifetime Award" to excellence in research, education and significant impact in the society (2023)

"Global TOP 10 COVID-19 Publication in 2022" selected by the National Institute for Digital Learning, Ireland (2023)

"UNESCO OER Implementation Award for Excellence" (2021)

"Most innovative Erasmus+ Project" for my MOOQ (2018)

ICDE Chair in OER by ICDE Board (2017 - 2021)

Center for Life Ethics

The ethically good means
respecting or promoting
the unfolding, plenitude, beauty, and embeddedness
of all life.

What is your position?

https://pingo.coactum.de/217673

The use of AI in education is for me …

0 (very bad) **5 (very good)**

What is your position?

https://pingo.coactum.de/217673

My own use of AI in teaching is …

0 (very bad) **5 (very good)**

International Crises



Crisis? What Crisis?

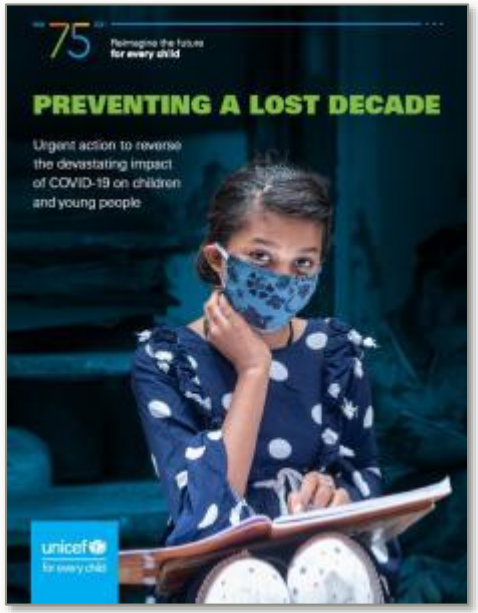
https://en.wikipedia.org/wiki/File:Supertramp_-_Crisis.jpg

Economic crisis (Hayes, profit only)
Education crisis (innovations, quality)
Media crisis (literacy, fake news)
Societal crisis (ethics, egoism)

We need innovative and high quality
Open Education for all as human right

Why to change education?

Current Challenges



New Normal?

https://www.unicef.org/reports/unicef-75-preventing-a-lost-decade

COVID-19 pandemic & lockdowns

War in Ukraine & many countries

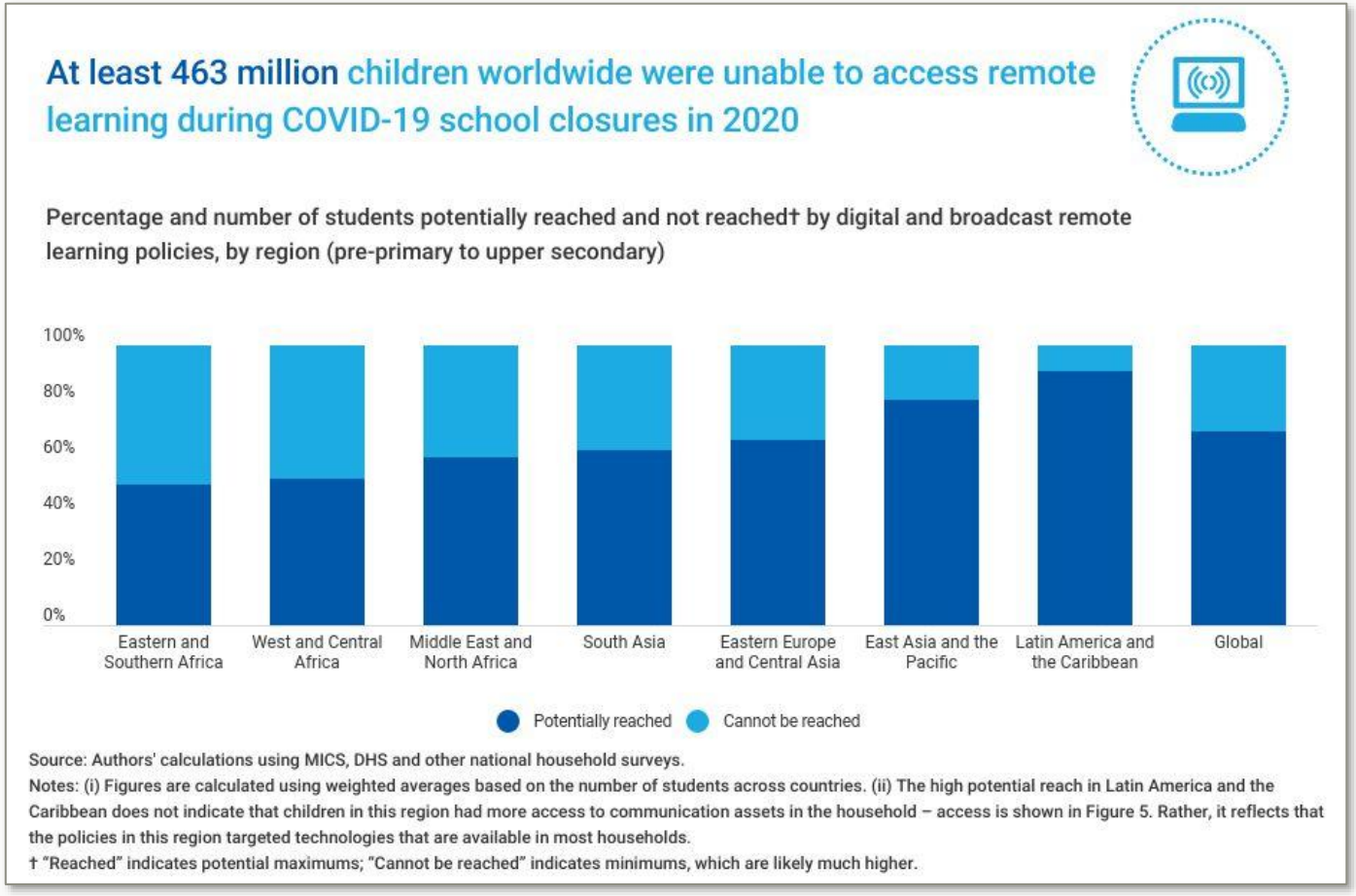
Climate change, poverty, hunger

And now, Artificial Intelligence (AI) is appearing and changing mindsets

Popular Misconceptions

No "social" services!	Commercial profit
No digital natives!	Digital literacy
No 21st century skills!	Competence development
No AI competences!	Only digital competences

Global Education (2020)



463 million pupils could not learn in the COVID-19 lockdowns anymore

=

1 in 3 pupils!

https://data.unicef.org/covid-19-and-children

Future of Our Education?

Digital divide	Democratisation
Fake news	Real social media
Egoism	Collaboration
Commercialisation	Public Good
Exploitation ideal	Education ideal

AI challenges

What is AI?



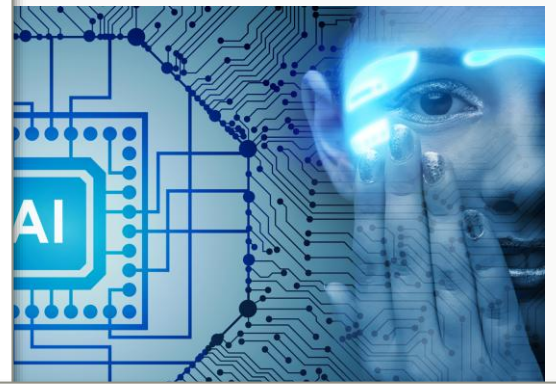
About Google DeepMind

Our mission is to build AI responsibly to benefit humanity

Empires of AI

The Rise and Fall of a New Global Order

USON,
SSEN,



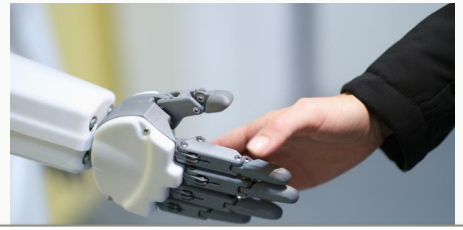
OpenAI Scraps Release of New AI Model Over Safety Concerns

Model dubbed GPT-6.1 Astra was due to make its debut inside ChatGPT and Codex in October

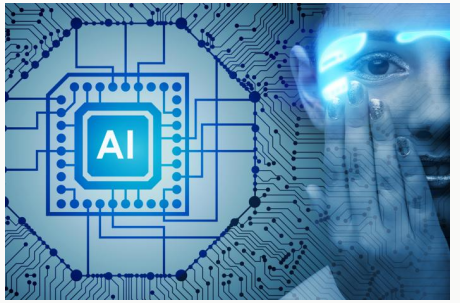
AI is diverse and a unique digital tool

AI is always a human-to-human relationship

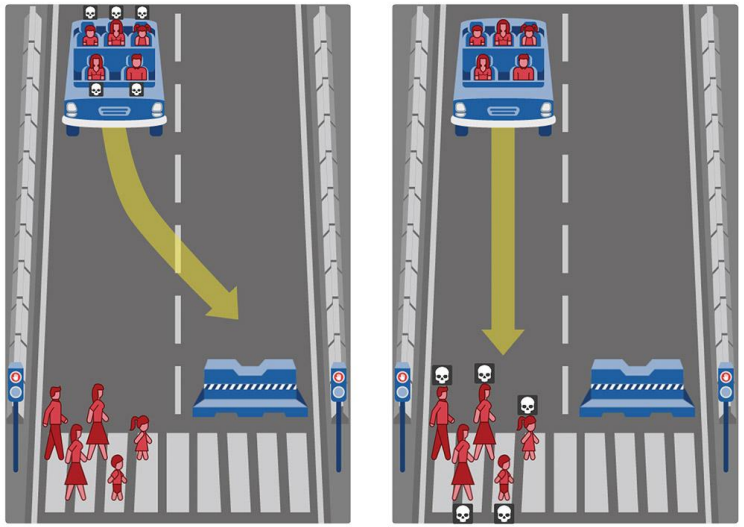
(in the responsibility)



Responsible AI?



Does AI already have human-level intelligence? The evidence is clear



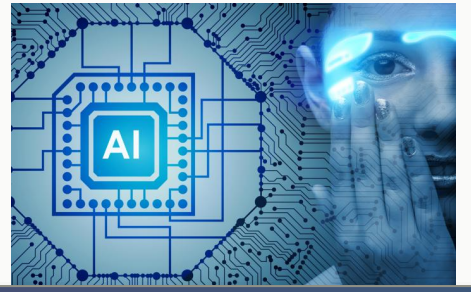
AI is Moving Fast. Traditional Governance Can't Keep Up.

Power concentration, monopolism and manipulation

Never allow final decision making by AI!



Sustainable AI?



NEWS | APRIL 14, 2026

xAI built an illegal power plant to power its data center

Written by Eric Hilt

We're suing the company for endangering local communities by violating the Clean Air Act.



selc.org/news/xai-built-an-illegal-power-plant-to-power-its-data-center

The EU spends billions on AI, but can anyone track the money?

Sustainability related:

- **Resources**
- **Investments**
- **Epistemology**
- **Society**

Time Pressure: Exponential Growth

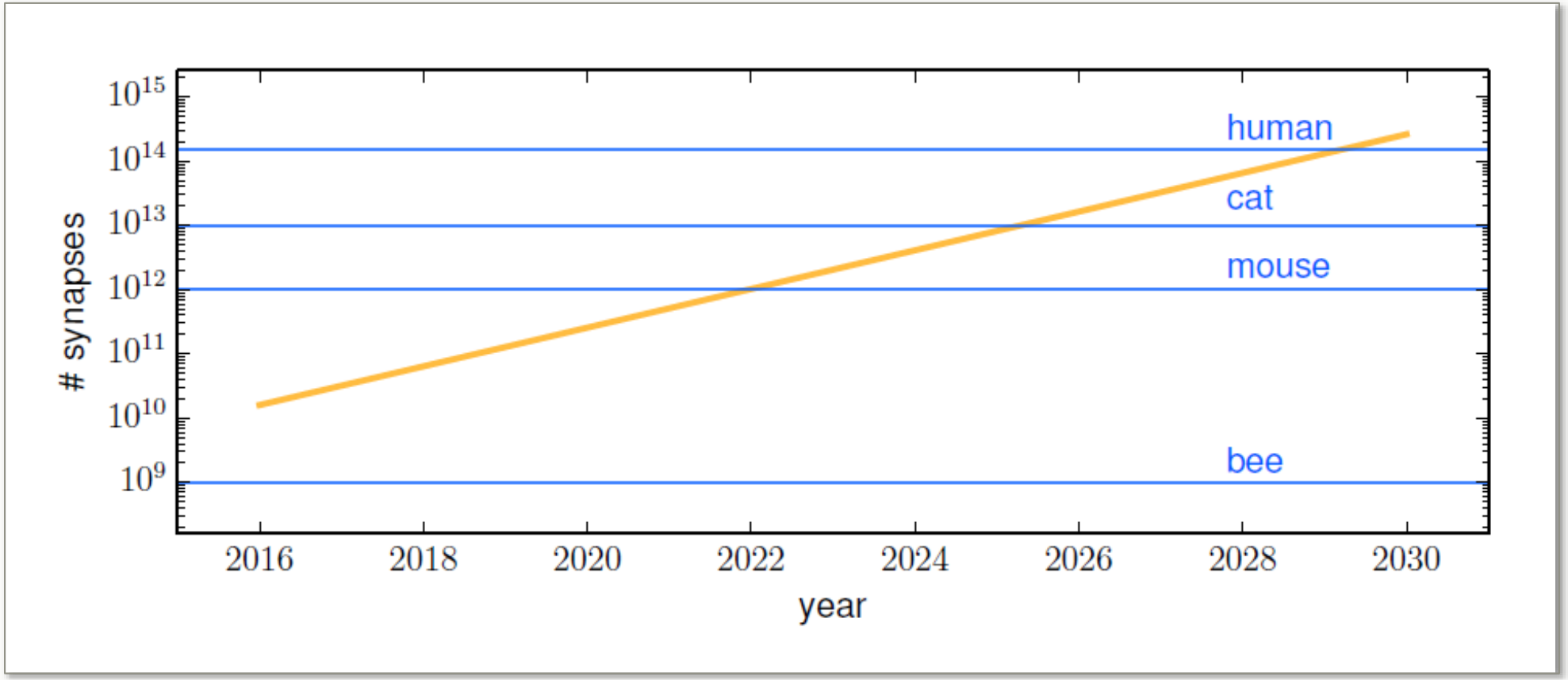


Figure: Christian Bauckhage (University of Bonn)

Time Pressure: Exponential Growth

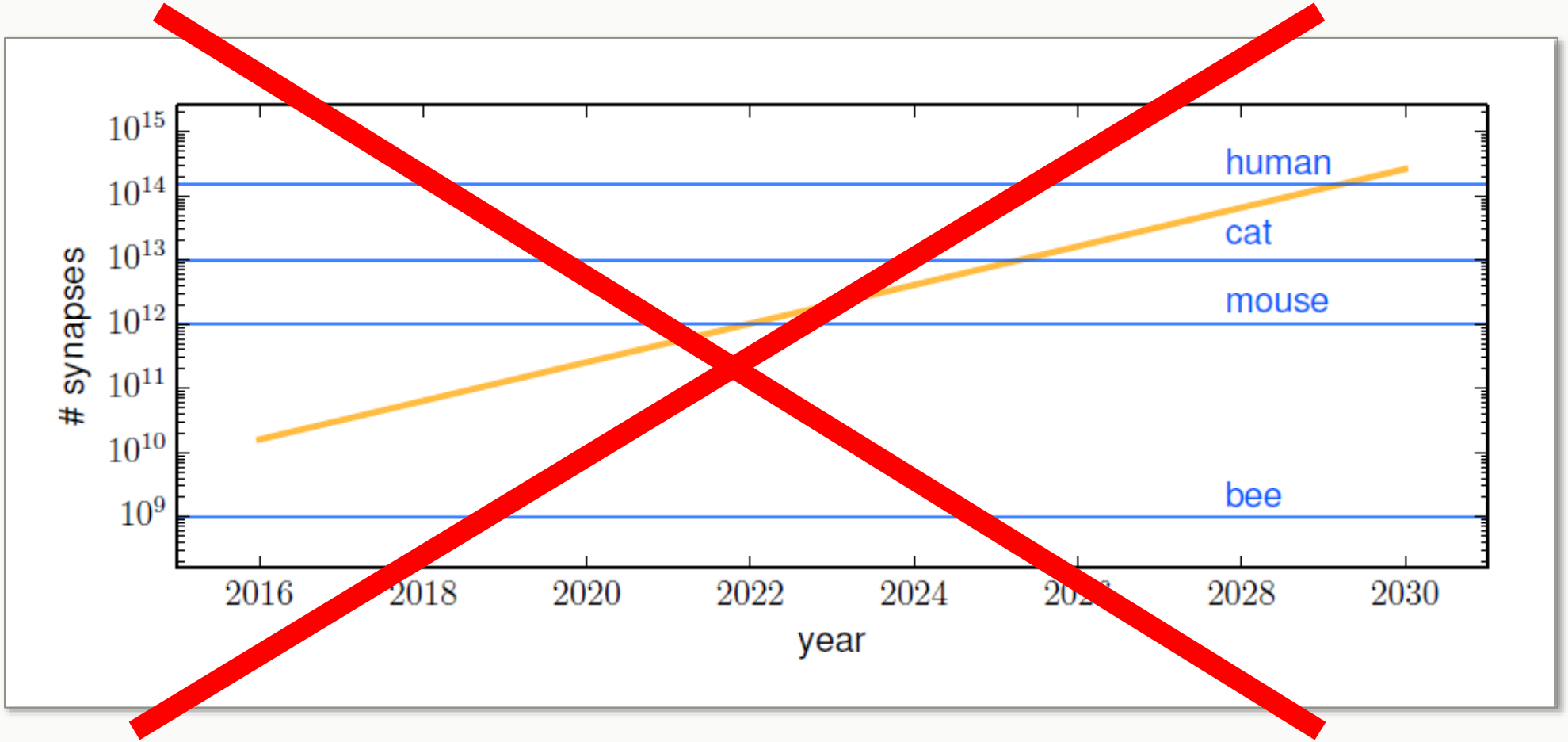


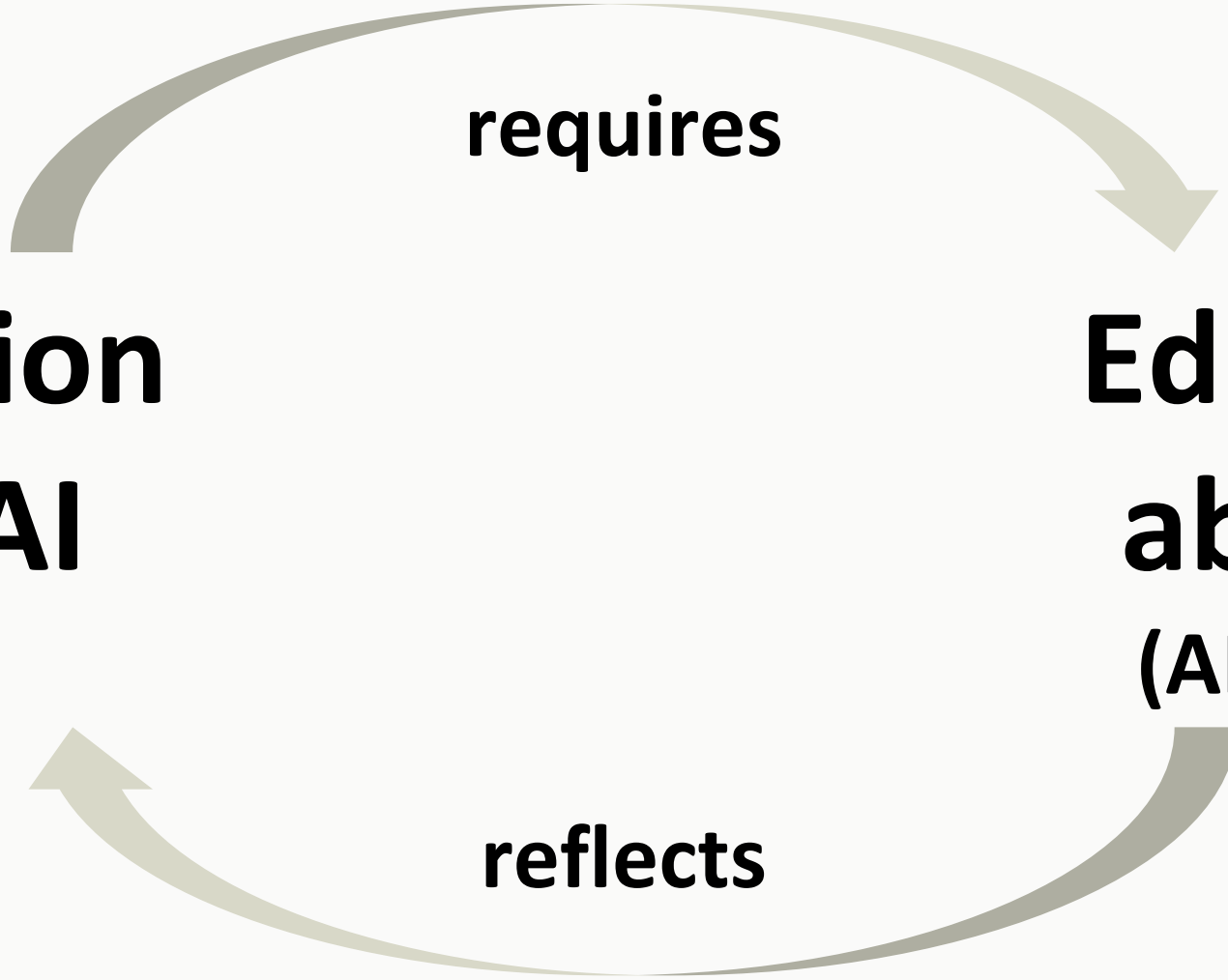
Figure: Christian Bauckhage (University of Bonn)

Hypothesis 1

Artificial Intelligence changes more than COVID-19 and any other digital tools

Education and AI (ED&AI)

ED&AI = Education with + about AI



Effective ED&AI?

Meta-analyses of 5-10 studies with effect sizes

Deng et al. (2025): 62 studies

https://doi.org/10.1016/j.compedu.2024.105224

Liu et al. (2025): 37 studies

https://doi.org/10.1111/jcal.70096

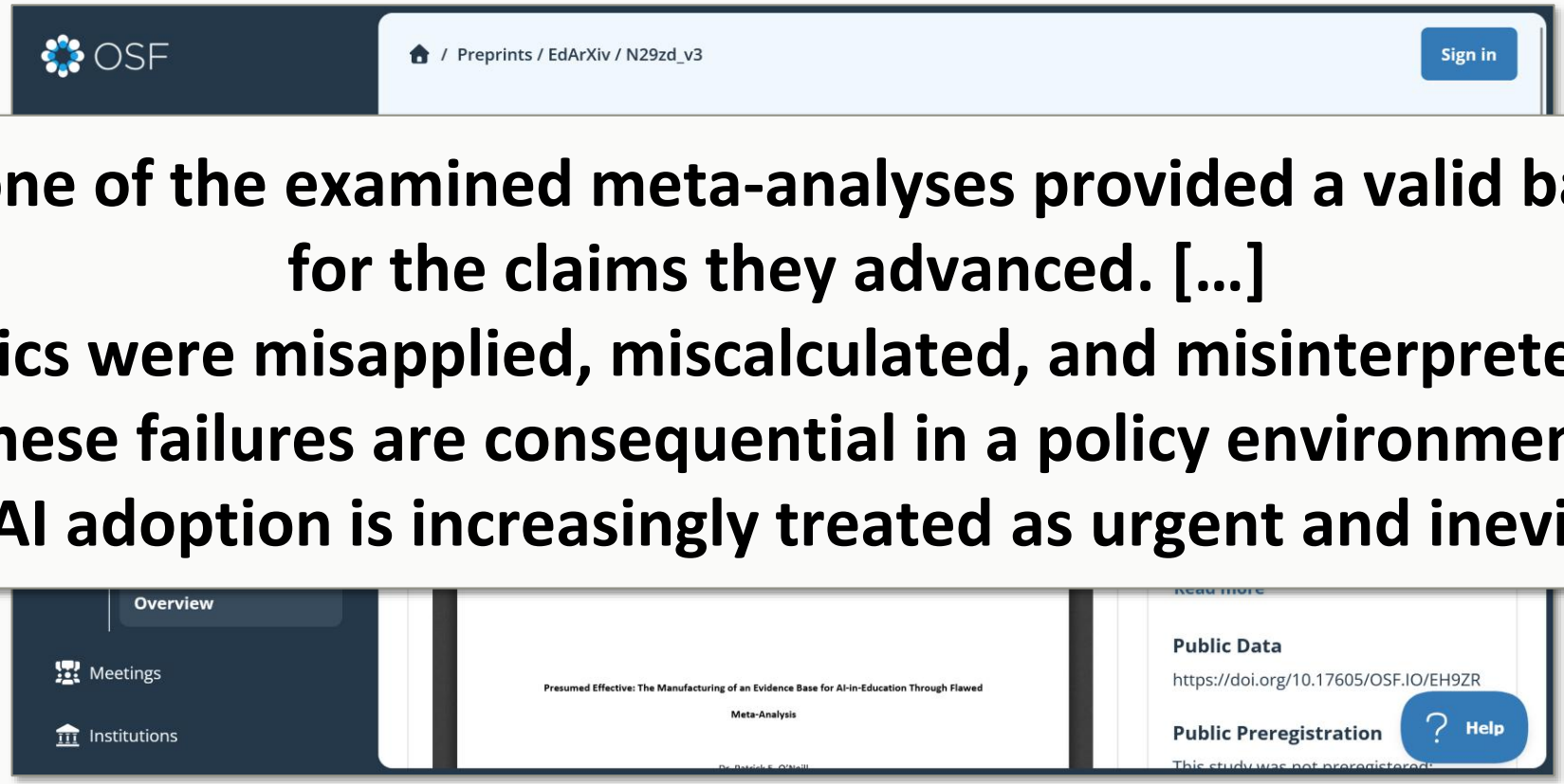
Wang & Fan (2025): 51 studies

https://d -04787-y

Retracted in 2026

Effective ED&AI?

Meta-meta-analysis of 14 meta-analyses

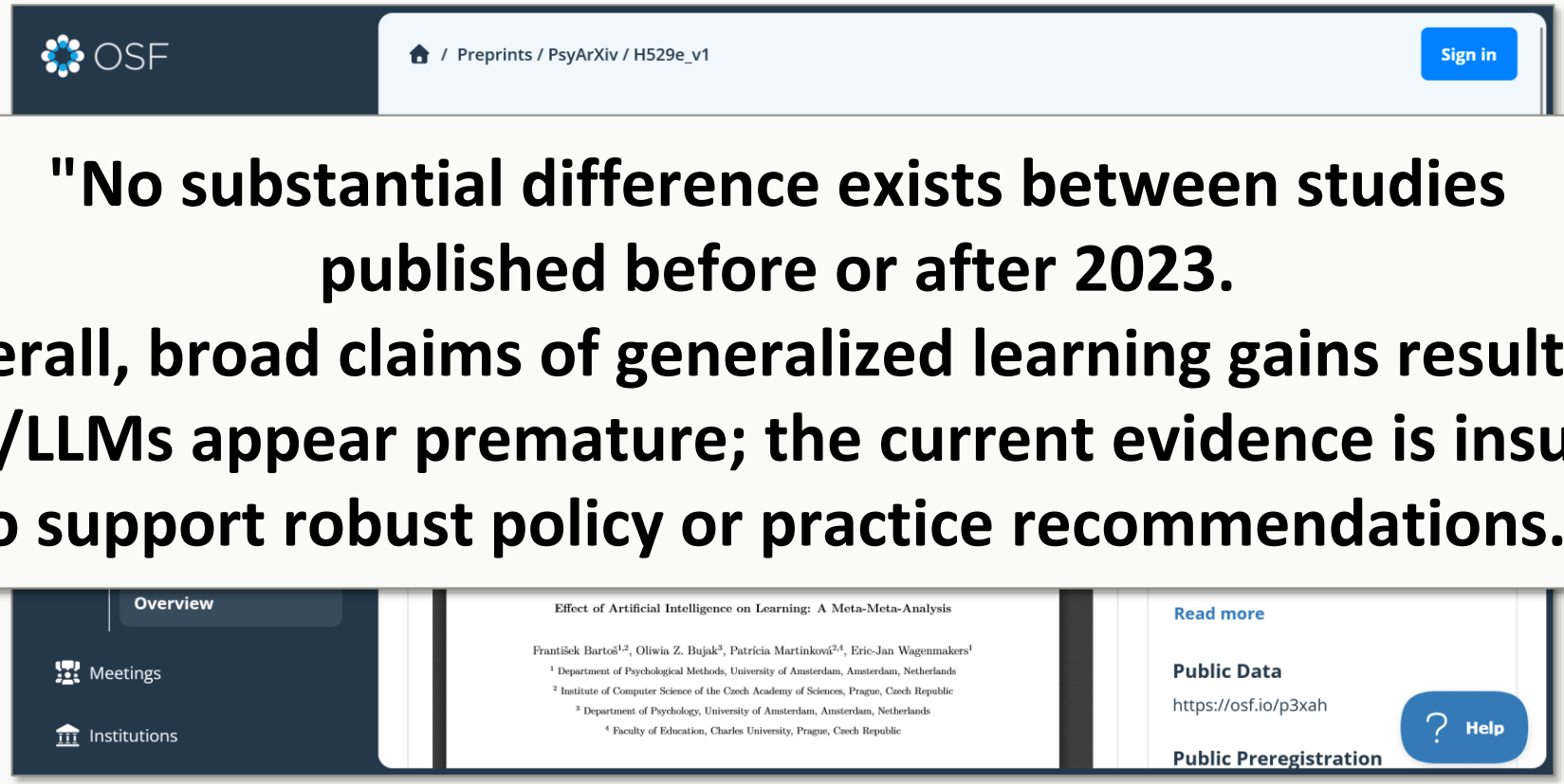


"None of the examined meta-analyses provided a valid basis for the claims they advanced. […]
Statistics were misapplied, miscalculated, and misinterpreted. […]
These failures are consequential in a policy environment where AI adoption is increasingly treated as urgent and inevitable."

https://doi.org/10.17605/OSF.IO/EH9ZR

Effective ED&AI?

Meta-meta-analysis of 67 meta-analyses



"No substantial difference exists between studies published before or after 2023.
Overall, broad claims of generalized learning gains resulting from AI/LLMs appear premature; the current evidence is insufficient to support robust policy or practice recommendations."

https://doi.org/10.31234/osf.io/h529e_v1

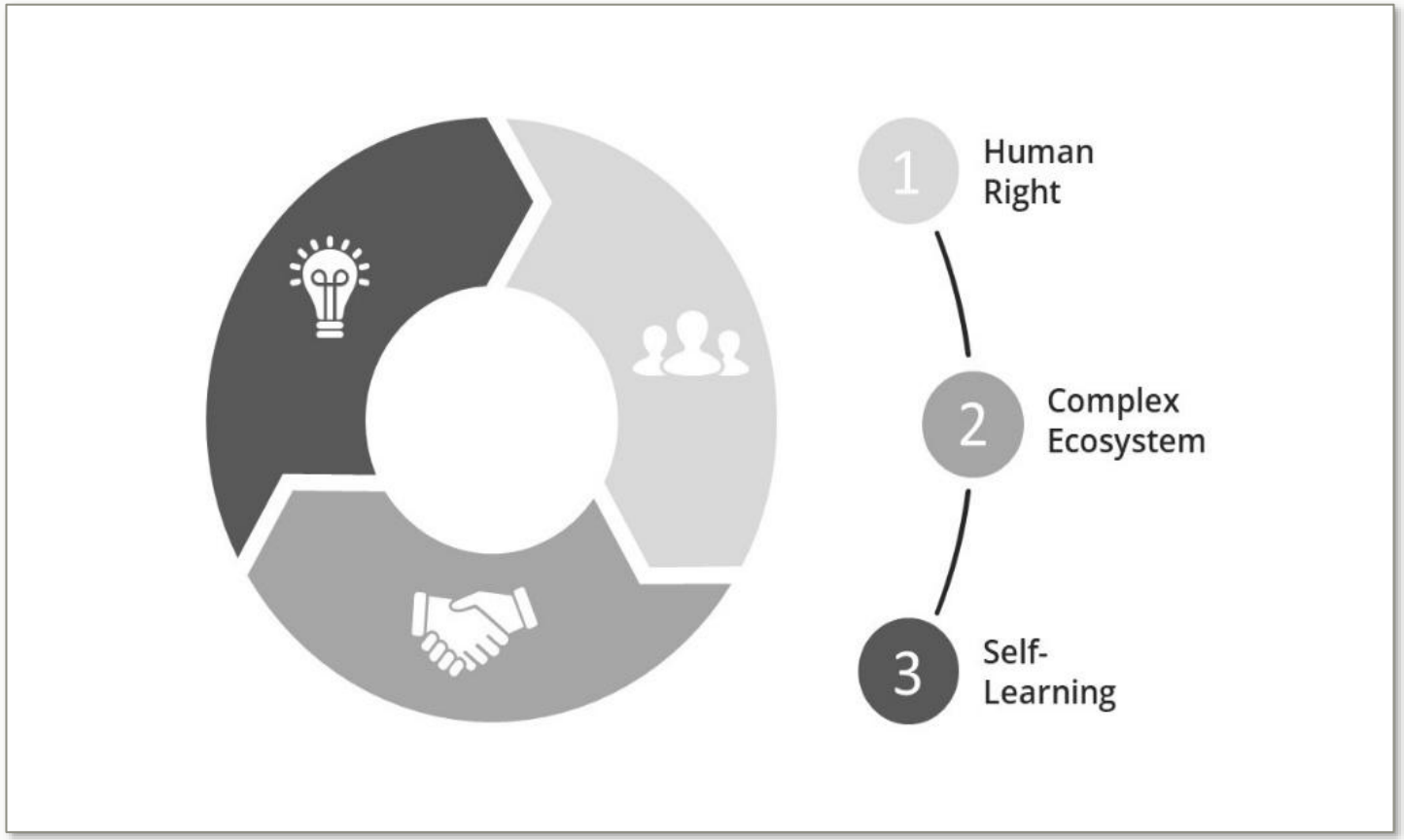
Effective ED&AI? Conclusions

Many Meta-analyses and Meta-meta-analyses

Meta-analyses are very promising in theory:
Often used for policy development

Unfortunately, many scientific issues in practice:
First meta-analyses are already retracted
- after high citations!

AI & the Special Case of Education

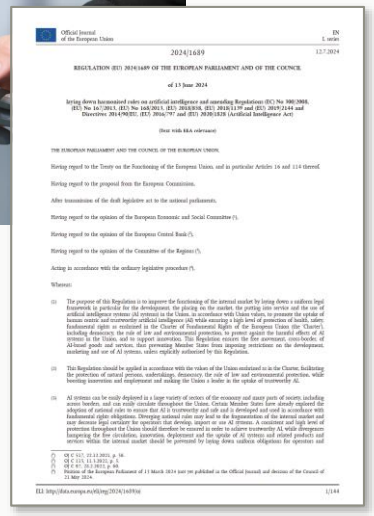


Stracke (2026a): https://doi.org/10.1007/s43681-026-01092-5 & Stracke (2026b): https://doi.org/10.1515/9783111586458-011

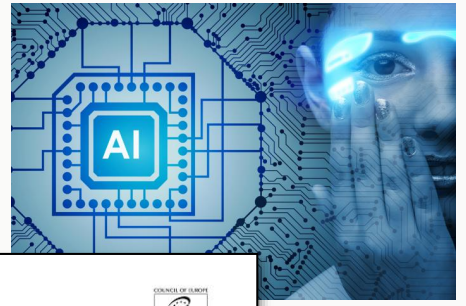
Hypothesis 2

Education with and about AI has to be regulated worldwide





AI Regulations





European Union (2024): EU AI Act - risk-based

Council of Europe (2024): AI Framework Convention Treaty 225 - value-based

Council of Europe AI&ED Expert Group: International AI conventions specific for Education

Ethical Education and AI (ED&AI)

Introduction of Education about AI



3 AI Literacy

2 Digital Literacy

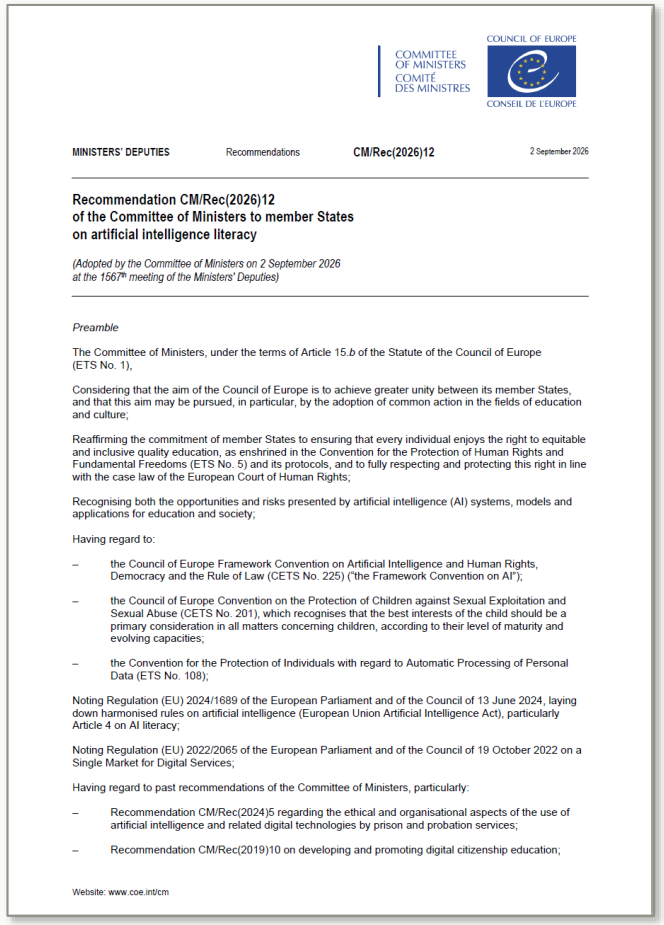
1 Ethical Literacy

AI&ED Expert Group by CoE



https://opening-up.education/artificial-intelligence-and-education

Council of Europe (CoE)



COMMITTEE OF MINISTERS
COMITÉ DES MINISTRES

COUNCIL OF EUROPE
CONSEIL DE L'EUROPE

MINISTERS' DEPUTIES Recommendations CM/Rec(2026)12 2 September 2026

Recommendation CM/Rec(2026)12
of the Committee of Ministers to member States
on artificial intelligence literacy

(Adopted by the Committee of Ministers on 2 September 2026
at the 1567th meeting of the Ministers' Deputies)

Preamble

The Committee of Ministers, under the terms of Article 15.*b* of the Statute of the Council of Europe (ETS No. 1),

Considering that the aim of the Council of Europe is to achieve greater unity between its member States, and that this aim may be pursued, in particular, by the adoption of common action in the fields of education and culture;

Reaffirming the commitment of member States to ensuring that every individual enjoys the right to equitable and inclusive quality education, as enshrined in the Convention for the Protection of Human Rights and Fundamental Freedoms (ETS No. 5) and its protocols, and to fully respecting and protecting this right in line with the case law of the European Court of Human Rights;

Recognising both the opportunities and risks presented by artificial intelligence (AI) systems, models and applications for education and society;

Having regard to:

– the Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law (CETS No. 225) ("the Framework Convention on AI");

– the Council of Europe Convention on the Protection of Children against Sexual Exploitation and Sexual Abuse (CETS No. 201), which recognises that the best interests of the child should be a primary consideration in all matters concerning children, according to their level of maturity and evolving capacities;

– the Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (ETS No. 108);

Noting Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024, laying down harmonised rules on artificial intelligence (European Union Artificial Intelligence Act), particularly Article 4 on AI literacy;

Noting Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services;

Having regard to past recommendations of the Committee of Ministers, particularly:

– Recommendation CM/Rec(2024)5 regarding the ethical and organisational aspects of the use of artificial intelligence and related digital technologies by prison and probation services;

– Recommendation CM/Rec(2019)10 on developing and promoting digital citizenship education;

Website: www.coe.int/cm

First International Convention on AI and Education adopted by all 46 member states of the Council of Europe (2nd of September 2026)

AI Literacy Recommendation

(developed by the AI&ED Expert Group)

https://search.coe.int/cm/eng?i=09125948802cde8e

Council of Europe (CoE)



MINISTERS' DEPUTIES

Recommendation CM/Rec(2026
of the Committee of Ministers t
on artificial intelligence literacy

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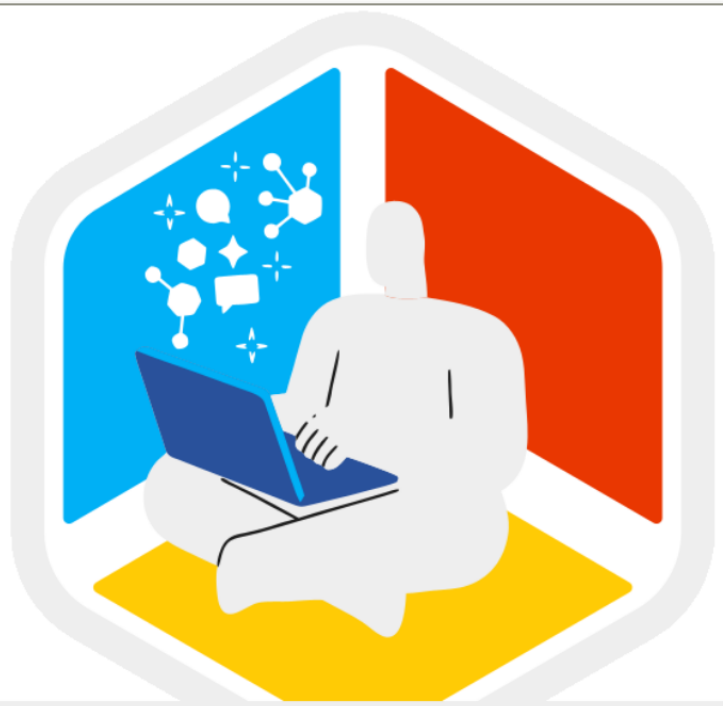
Noting Regulation (EU) 2022/2065 of t
Single Market for Digital Services;

Having regard to past recommendatio

– Recommendation CM/Rec(202
artificial intelligence and relate

– Recommendation CM/Rec(20

Website: www.coe.int/cm



A COMPREHENSIVE MODEL

Together, these three dimensions define AI literacy as a continuum of capabilities enabling individuals to understand, question, and shape the role of AI in society and make informed decisions about the use of AI systems.

HUMAN PRIORITY

Understanding the ethical, socio-political, cognitive, psychological, cultural, environmental and personal implications of AI, including its impact on human rights, democracy, the rule of law and social agency.

TECHNOLOGICAL

Understanding how AI systems function, including their design, data dependency, development, operational mechanisms, capacities, limitations and technical principles, and their probabilistic nature.

PRACTICAL

Engagement with AI systems in real-world contexts, including their ethical, responsible, safe and effective use and deployment, and recognition of their benefits and risks.

https://search.coe.int/cm/eng?i=09125948802cde8e

How to change education?

Sustainable Development Goals



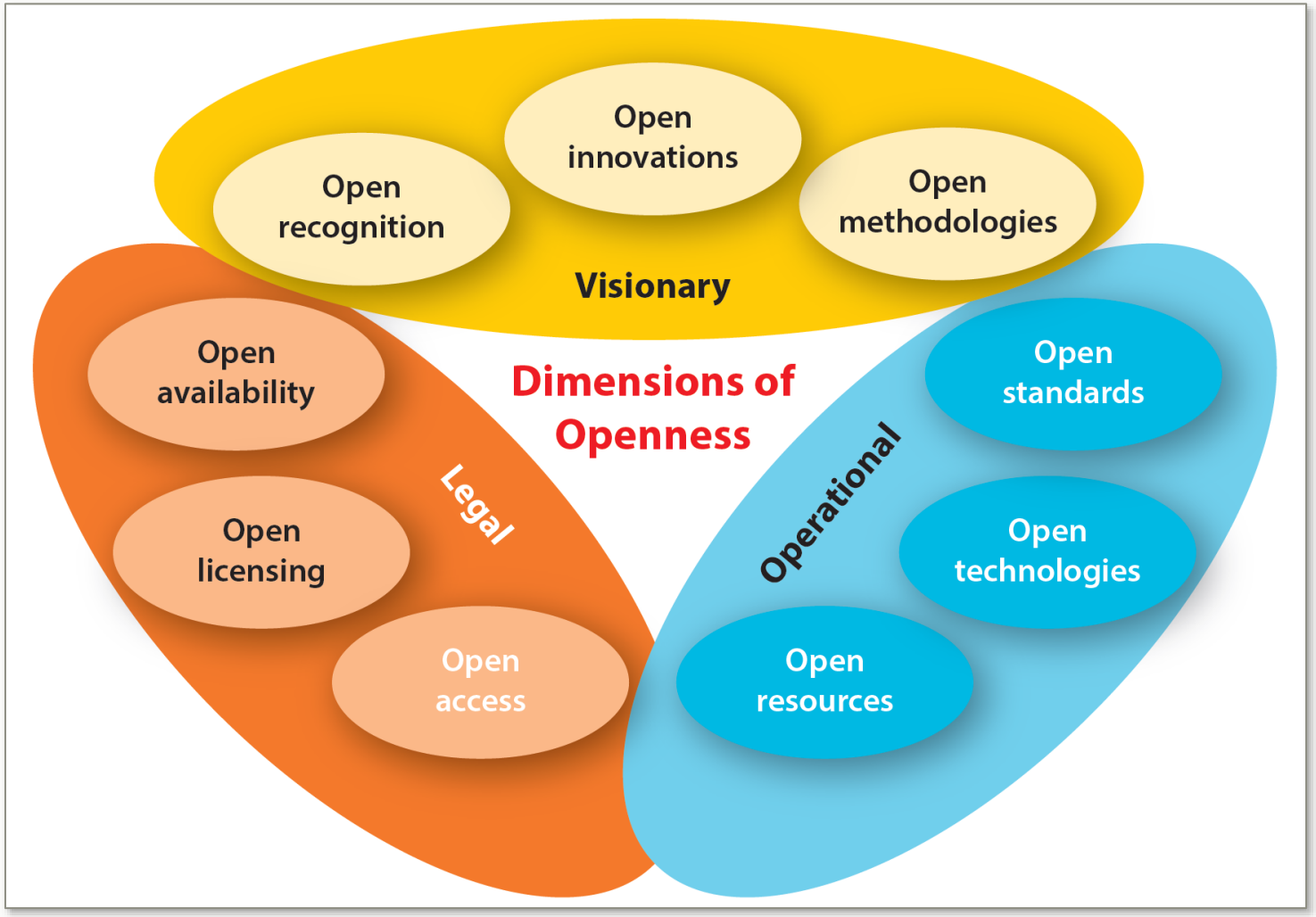
https://www.unesco.org/en/sdgs

Sustainable Development Goals



https://www.unesco.org/en/sdgs

Open Education as Philosophy



https://doi.org/10.1007/978-3-319-58509-3_23

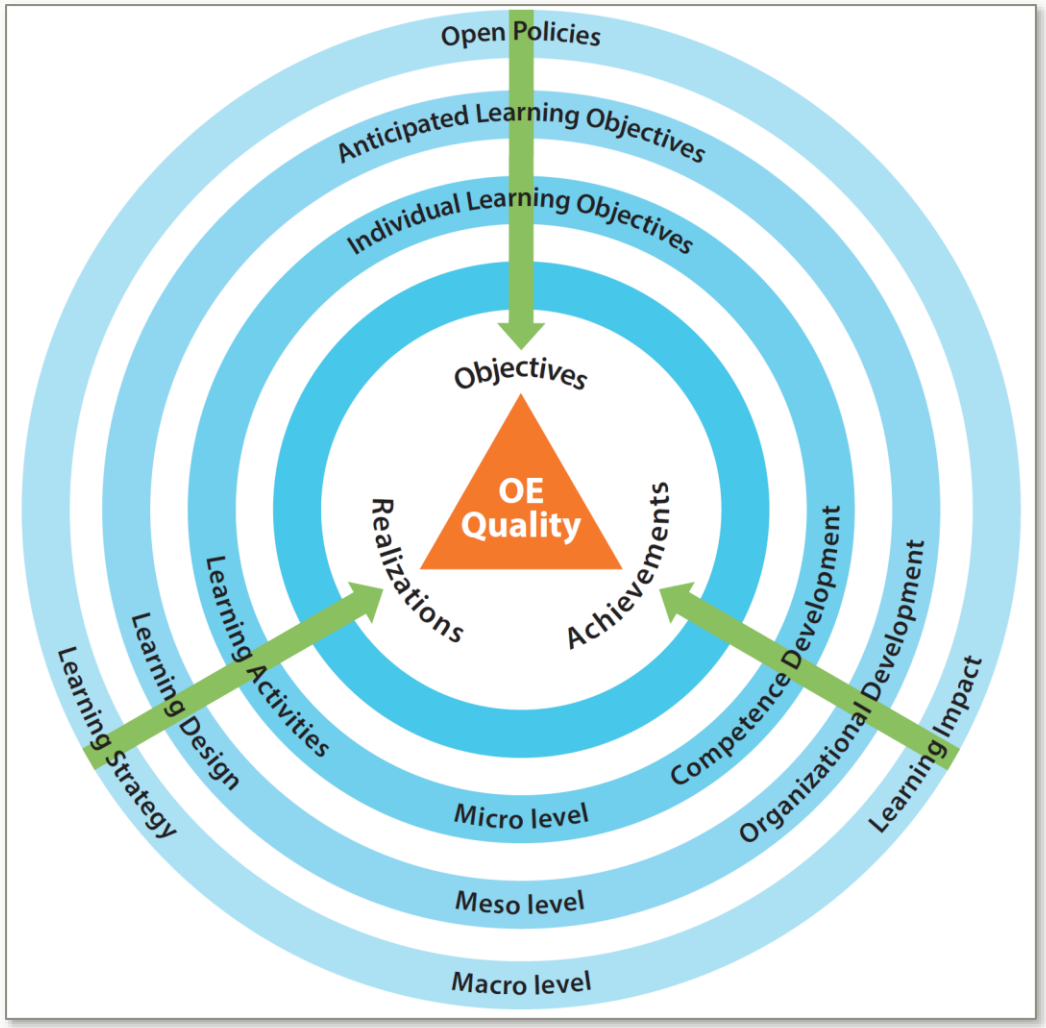
Open Quality Education

Global goal of Quality Education as SDG 4

Open Education for All as solution

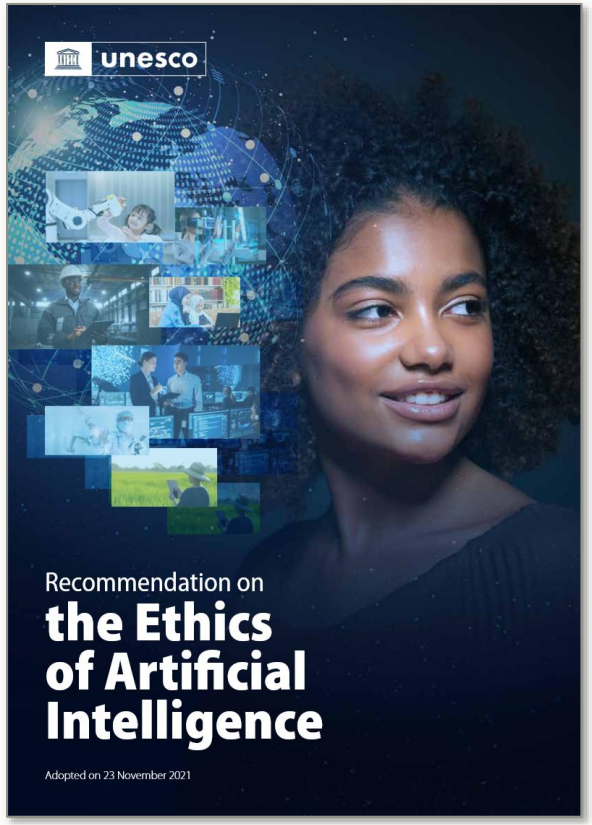
AI as tool to be integrated if it makes sense

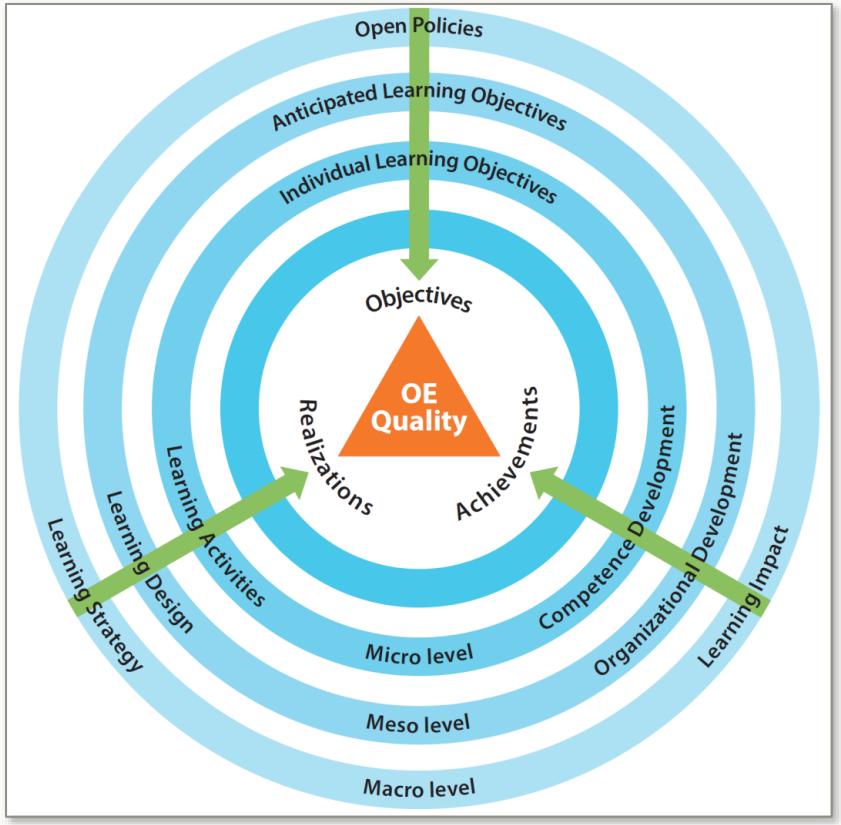
Open Quality Education with AI?



http://doi.org/10.19173/irrodl.v20i2.4213

Open Quality Education with AI?







https://unesdoc.unesco.org/ark:/48223/pf0000381137 http://doi.org/10.19173/irrodl.v20i2.4213 https://unesdoc.unesco.org/ark:/48223/pf0000399349

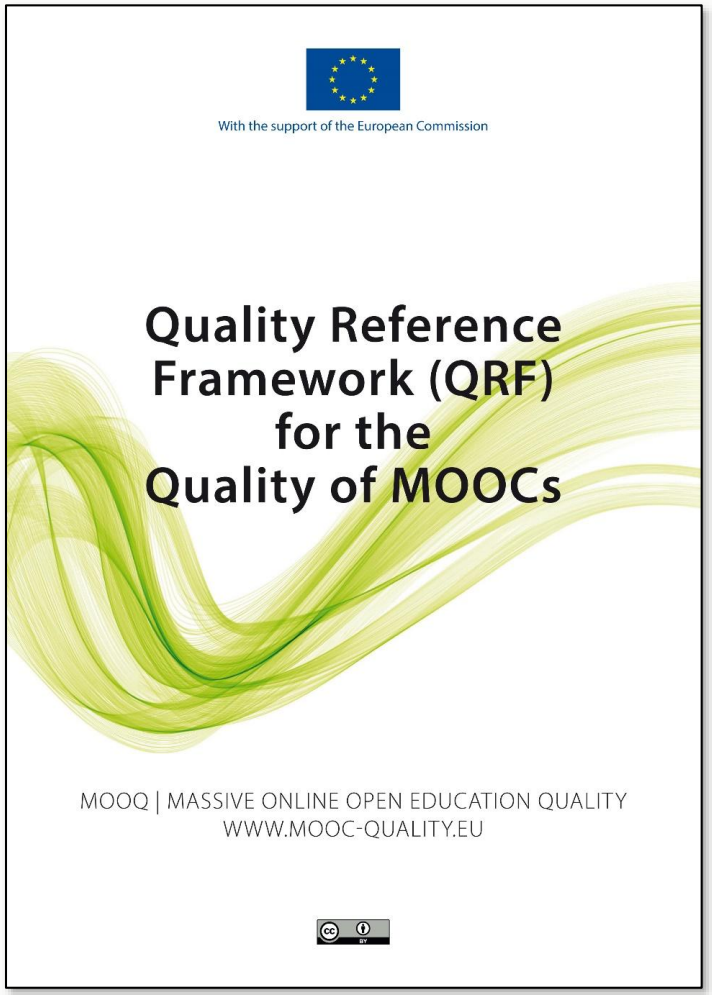
Consequences for Education with AI

Design of education is crucial and most important

In particular assessment has to be changed

Decision about use of AI (or not) is required

Quality Reference Framework





QRF freely & openly available online:

www.MOOC-quality.eu/QRF

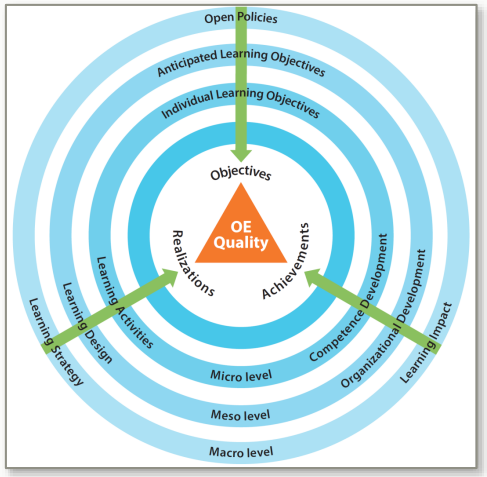
https://doi.org/10.5281/zenodo.3894573

Open Quality Education with AI?

Governments & public authorities: Binding laws

Organisations & institutions: Binding strategies

Teachers & students: Binding decisions



My Assessment Practices

Traditional lectures into group work (since 2008):
Project-based tasks with feedback & peer-reviews

Up to 200 students in online groups of 4-10:
Individual assessment only in oral examinations

Teaching assistants are needed, only 3 meetings:
Start with videos, mid-term exchange, final results

AI Policies for Ethical Assessment

ASSAI for formative & summative assessment with AI

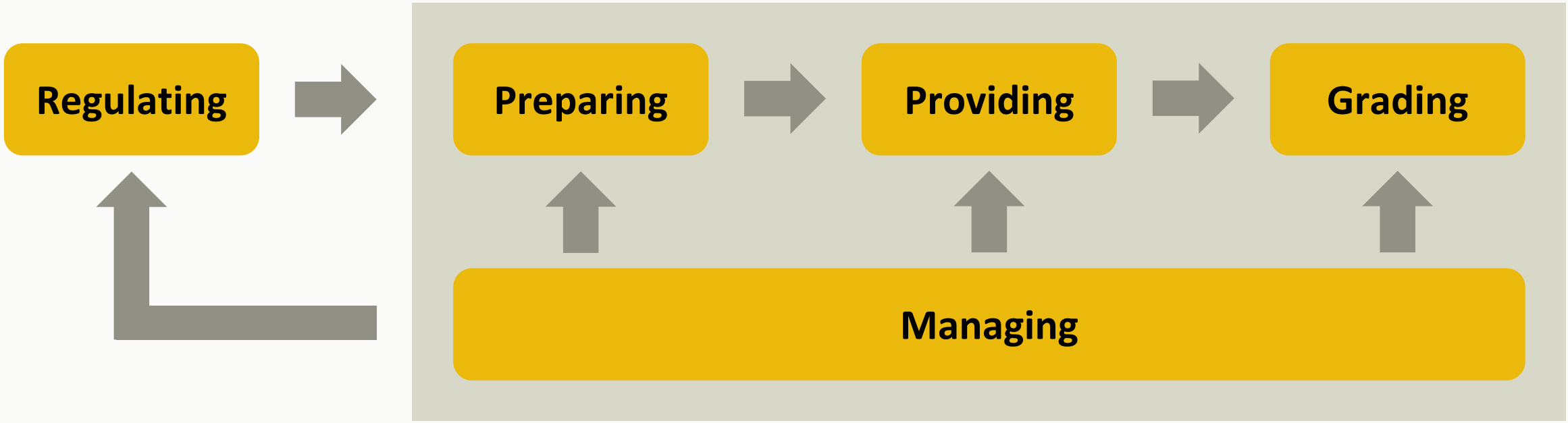


1. "Preparatory studies": ethical use, principles and processes of GenAI
2. "Inquiries": systematic GenAI review into the use of GenAI in assessment
3. "Policy formulation": collaboration with stakeholders for ethical GenAI
4. "Mainstreaming": web-based policy & policy implementation services.

https://assai-project.eu

Assessment with AI

First phase: acceptance or rejection of GenAI use in assessment by public authorities and institutions



AI Policies for Ethical Assessment

ASSAI for formative & summative assessment with AI



AI policies for assessment practices

AI used for assessment preparations

AI used during assessment practices

AI used for grading assessment results

https://assai-project.eu

Assessment Alternatives

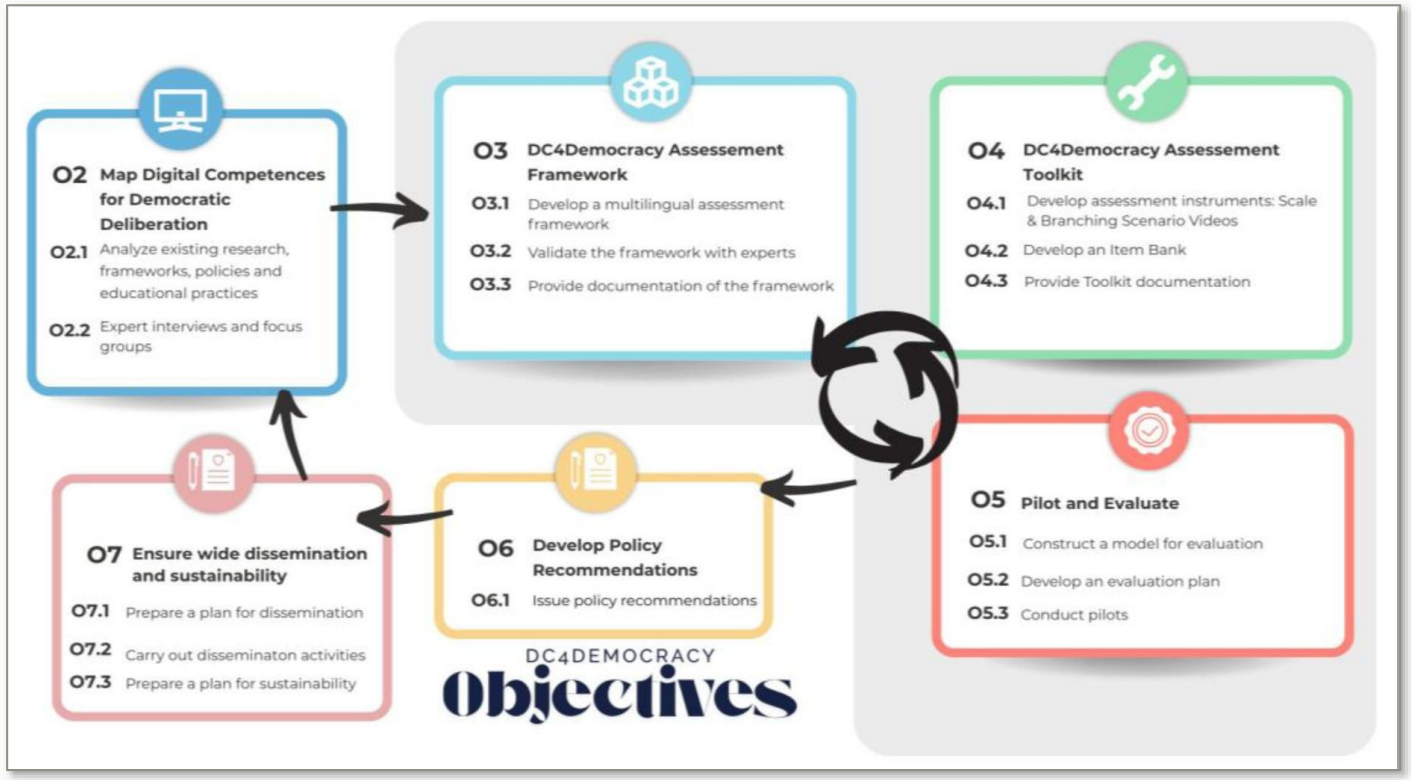
Oral examinations instead of written assessments:
Same time for grading 4 students (2 h) or even less

Problems, projects and products as study tasks:
AI to be continuously used & documented as tool

Written texts with high-level analysis demands:
Reflections & individual opinions as main content

Democracy Building with AI

DC4Democracy: Deliberations in schools for AI



https://dc4democracy.eu

Democracy Building with AI

DC4Democracy: Deliberations in schools for AI



Democracy building in schools

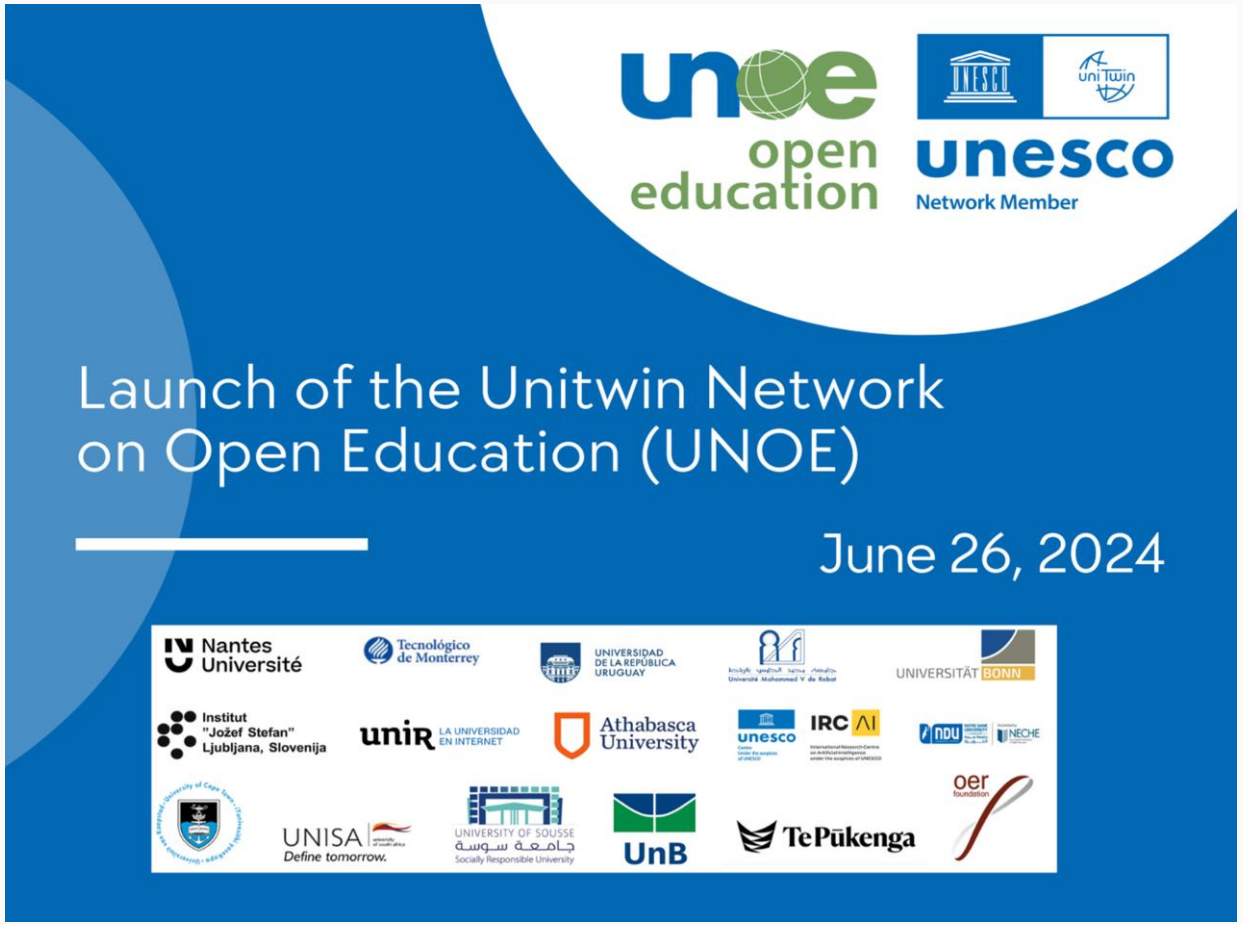
Digital competences for society

Assessments of these buildings

Policy recommendations and tools

https://dc4democracy.eu

UNESCO Network UNOE



UNOE = UNESCO Unitwin Network on Open Education

16 partners from all five continents

https://opening-up.education

https://unitwin-unoe.org

Networks "Ethical Use of AI"

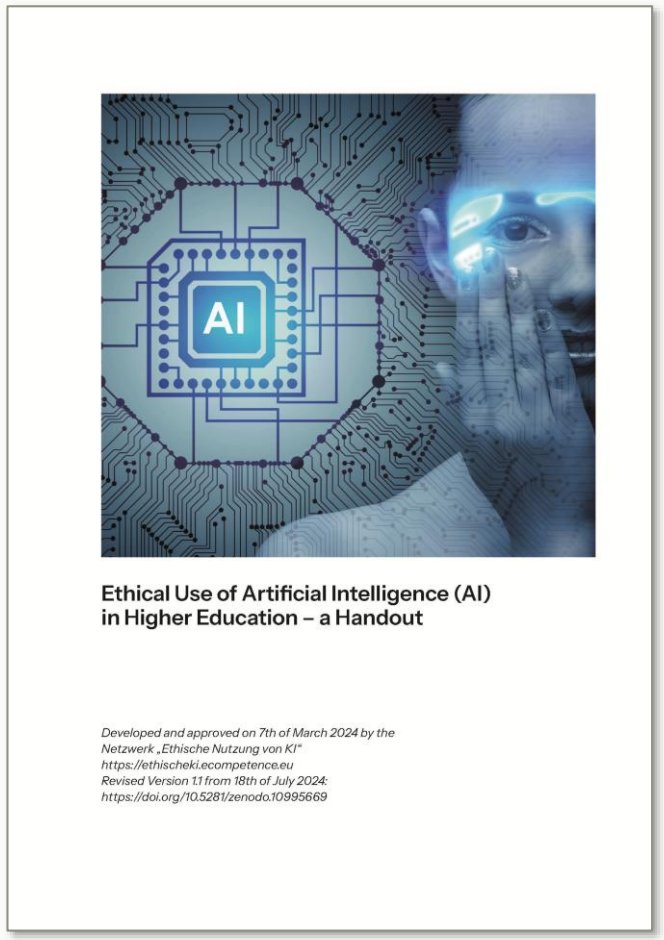


German Network since March 2023:
https://ethischeki.ecompetence.eu

European Network since AIED 2023:
https://ethicalai.ecompetence.eu

Monthly meetings for collaboration:
Everybody is most welcome!

Network "Ethical Use of AI"



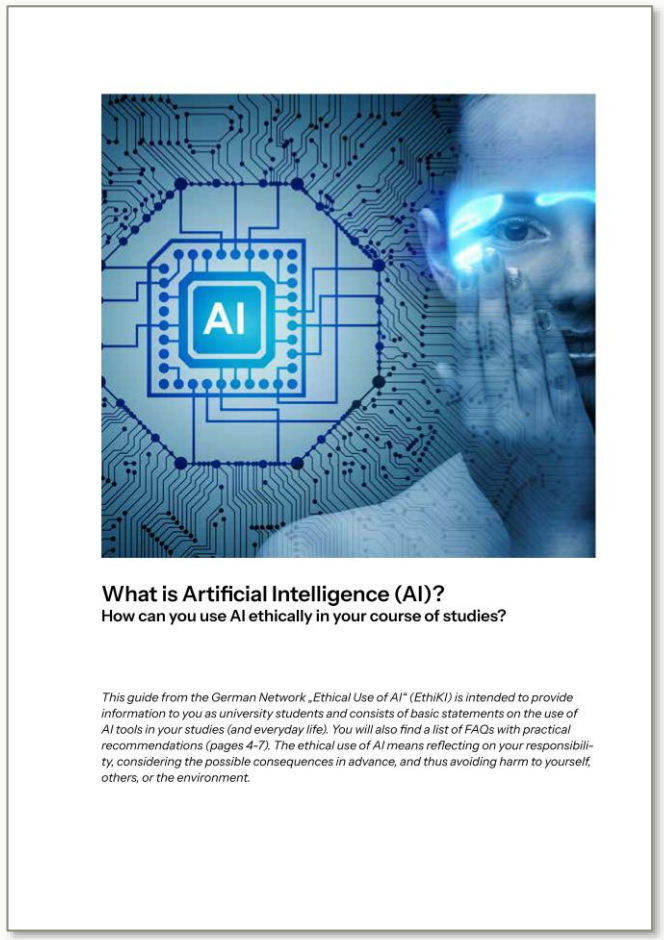
"Ethical Use of AI in Higher Education – a Handout" for university teachers

(Version 1.1 from 18th of July 2024)

- **10 Statements (1 page) and FAQ-Liste with answers (4 pages)**
- **For university teachers & leaders**

https://doi.org/10.5281/zenodo.10793844

Network "Ethical Use of AI"



"What is AI? How can you use AI ethically in studies?" for students

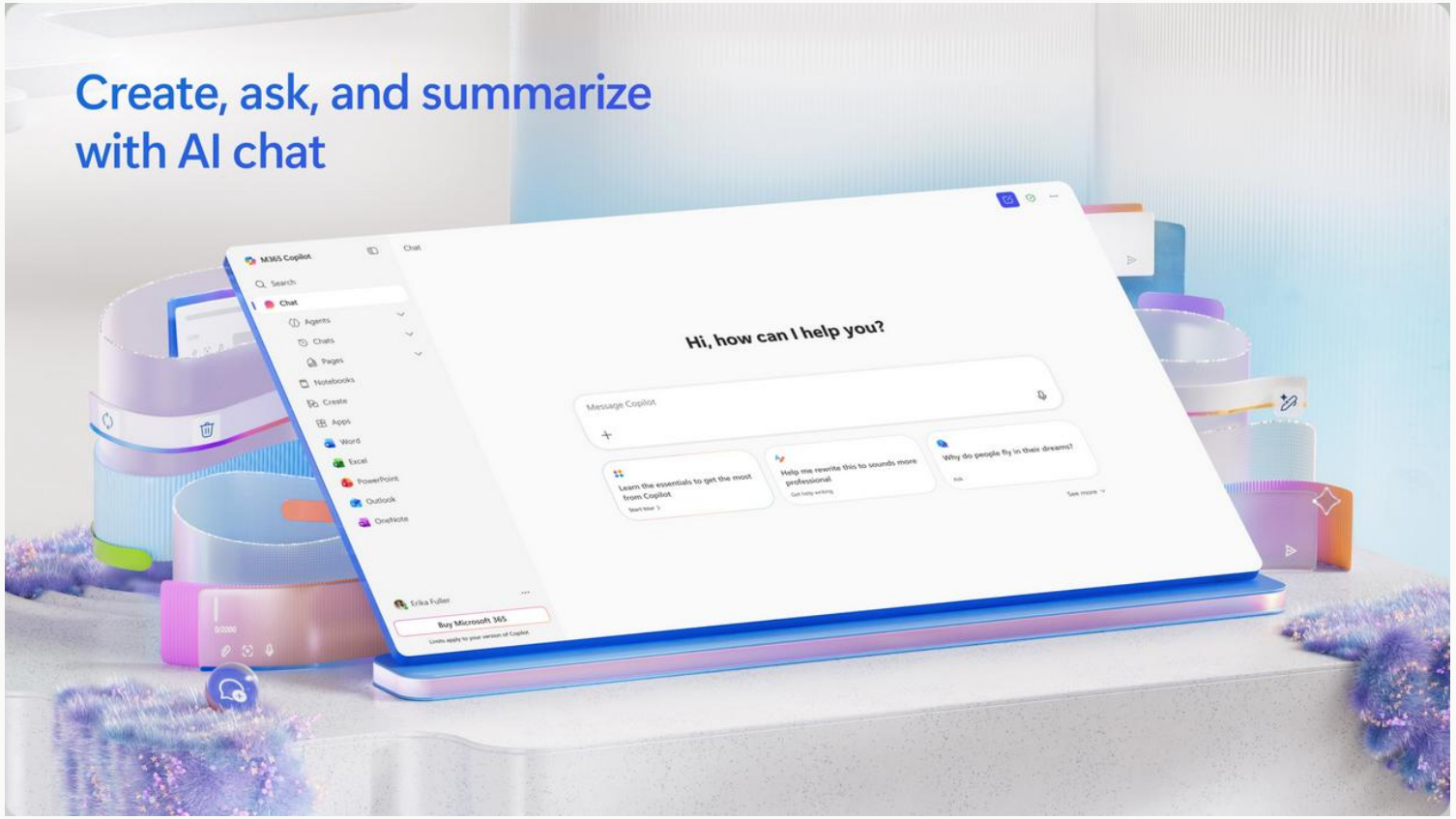
(Version 1.0 from 6th of May 2025)

- **Specifically for students & their guidance with 10 Statements and FAQ list plus recommendations**

https://doi.org/10.5281/zenodo.23040469

And the Future of ED&AI?





https://tenor.com/de/view/ai-bot-chatgpt-artificial-chat-gpt-gif-28270493876272123 8 - https://apps.microsoft.com/detail/9wzdncrd29v9?hl=en-US

Safeguarding the Future ED&AI

Educators should only decide based on defined learning objectives whether they use and integrate AI in their education (or not).

Educators need to be aware of these future developments (that AI will be everywhere) and require AI literacy (and also the students).

And the Future AI & Society?



In the (near?) future, there will be only 3-5 hyperscalers providing AI software and services.

Hyperscalers are buying land, nuclear power and water: Who gets what resources?

https://www.pexels.com/de-de/foto/gehen-madchen-jung-kind-13229632

Safeguarding the Future AI & Society

We must regulate Artificial Intelligence to facilitate its best impact and its safe and equitable use in education.

Education and Artificial Intelligence have to focus and answer ethical questions to guarantee human rights and democracy in our society.

And the Future of (ED&) AI?

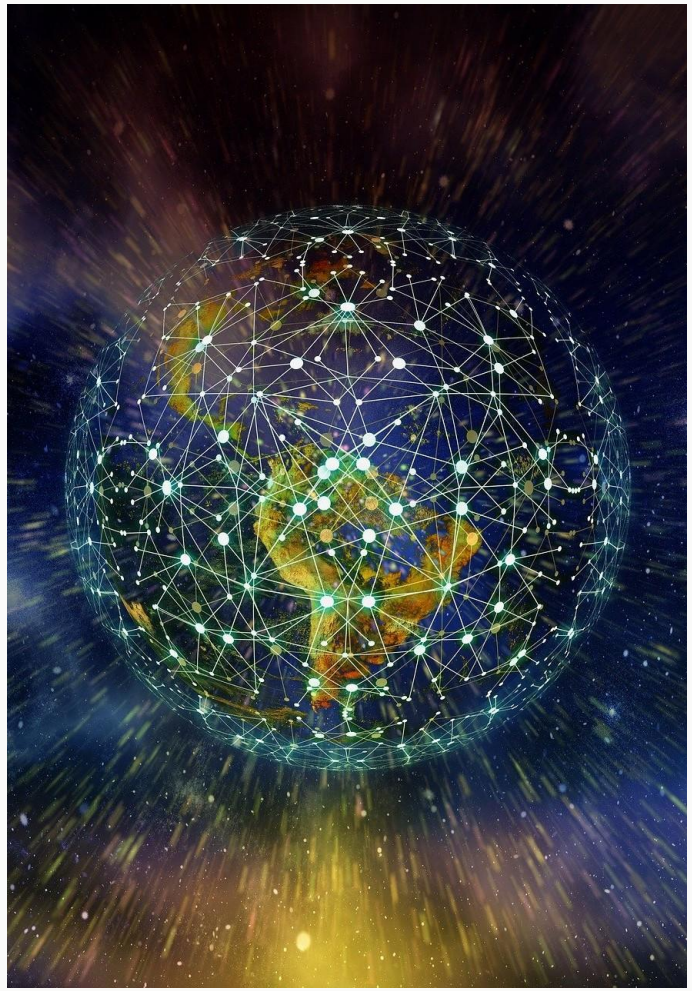


Possible route to loss of human control over AI: capable agents pursuing goals that conflict with human intentions

Stopping their activities does not demonstrate that humans will retain control over more capable agents

https://www.un.org/independent-international-scientific-panel-ai/en/thematic-briefs/ai-agents-misalignment-risks

Future of Education and AI?

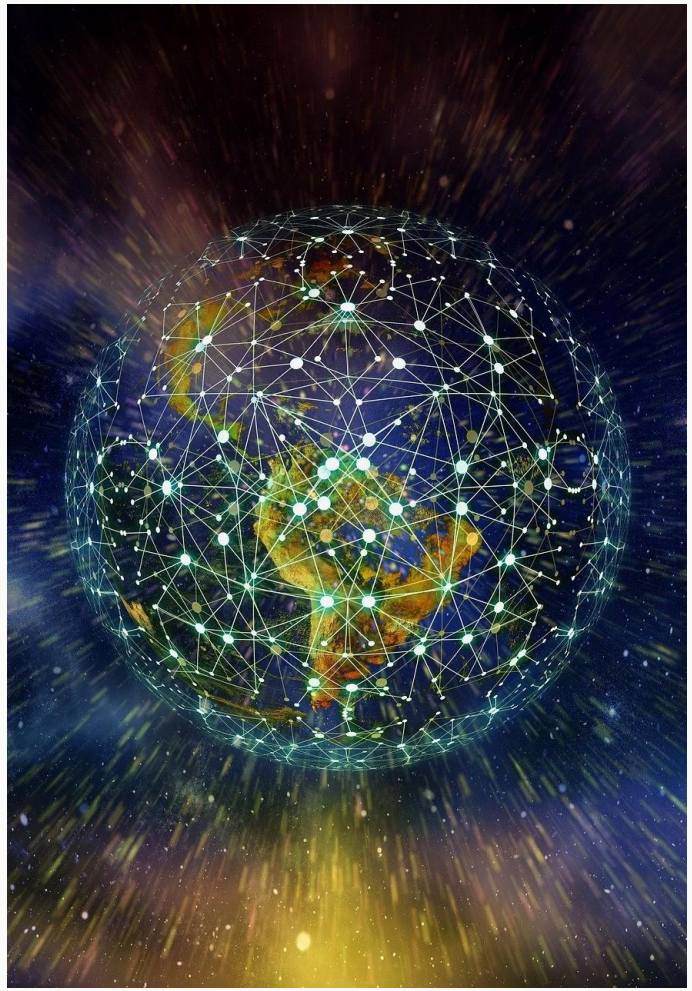


Safe, responsible and fair AI use for All

Regulation of AI: Restrictions and chances

Transparency and infrastructure

Open AI Questions for Discussion



Pedagogical: Strategies, learning goals, curricula, environments, assessments

Technological: Blackbox, souvereignty

Ethical: Bias, personality, deskilling

Societal: Human rights, literacy, autonomy, resources, digital divide

Hypothesis 3

AI and Education have to focus much stronger ethics, democracy and our social future and society

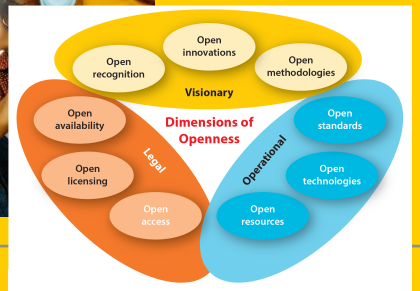
My Central Hypotheses







1. AI changes education more than COVID-19 and any other digital tool
2. Education with and about AI has to be regulated: for clear rules and chances
3. Education and AI have to focus stronger ethics, democracy and our whole society



Open Education

https://opening-up.education/artificial-intelligence-and-education

What is your position?

https://pingo.coactum.de/217673

The use of AI in education is for me …

0 (very bad) **5 (very good)**

What is your position?

https://pingo.coactum.de/217673

My own use of AI in teaching is …

0 (very bad) **5 (very good)**

Education and AI

Interested? Contact me!



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www.opening-up.education

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References

Stracke, C. M. (2026). Education is a special sector: Why we need ethical regulation of Artificial Intelligence and Education (AI&ED) and how we benefit from it.
AI and Ethics, 6(309).
https://doi.org/10.1007/s43681-026-01092-5 [Open Access]

Stracke, C. M., (2026). Artificial Intelligence and Education (AI&ED).
In A. Manzeschke & T. Wittenberg (eds.), *Ethical Perspectives on Artificial Intelligence in Biomedical Engineering* (pp. 145-158). De Gruyter.
https://doi.org/10.1515/9783111586458-011 [Open Access]

Stracke, C. M., Nahar, N., Punzo, V., Massaro, S., Pappa, D., Di Grassi, A., Bećirović, S., Hollins, P., Ziouvelou, X., Skenduli, M. P., & Burgos, D. (2025). Artificial Intelligence Policies for Higher Education: Manifesto for Critical Considerations and a Roadmap. *MAP Education and Humanities, 6*, 61-73.
https://doi.org/10.53880/2744-2373.2025.6.61 [Open Access]



References

Stracke, C. M., Griffiths, D., Pappa, D., Bećirović, S., Polz, E., Perla, L., ... , & Hollins, P. (2025). Analysis of Artificial Intelligence Policies for Higher Education in Europe. *International Journal of Interactive Multimedia and Artificial Intelligence, 9*(2), 124-137. https://doi.org/10.9781/ijimai.2025.02.011 [Open Access]

Xiao, J., Bozkurt, A., Nichols, M., Pazurek, A., Stracke, C. M., Bai, J. Y. H., ..., & Themeli, C. (2025). Venturing into the Unknown: Critical Insights into Grey Areas and Pioneering Future Directions in Educational Generative AI Research. *TechTrends, 69*, 582-597. https://doi.org/10.1007/s11528-025-01060-6 [Open Access]

Bozkurt, A., Xiao, J., Farrow, R., Bai, J.Y.H., Nerantzi, C., Moore, S., Dron, J., Stracke, C.M., ... , & Asino, T.I. (2024). The Manifesto for Teaching and Learning in a Time of Generative AI: A Critical Collective Stance to Better Navigate the Future. *Open Praxis, 16*(4), 487-513. https://openpraxis.org/articles/10.55982/openpraxis.16.4.777 [ESCI, Open Access]



References

Stracke, C. M. (2024). Artificial Intelligence and Education: Ethical questions and guidelines for their relations based on human rights, democracy and the rule of law. In D. Burgos et al. (Eds.), *Radical Solutions for Artificial Intelligence and Digital Transformation in Education* (pp. 97-107). https://doi.org/10.1007/978-981-97-8638-1_7 [Open Access]

Burgos, D., Branch, J. W., Tlili, A., Stracke, C. M., & de la Higuera, C. (2024). Artificial Intelligence, Digital Transformation, and Education as a Combined Contribution to Society. In D. Burgos et al. (Eds.), *Radical Solutions for Artificial Intelligence and Digital Transformation in Education* (pp. 3-13). https://doi.org/10.1007/978-981-97-8638-1_1 [Open Access]

Burgos, D., Branch, J. W., Tlili, A., Huang, R., Jemni, M., Stracke, C. M., ... , & Berrada, K. (2024) (Eds.), *Radical Solutions for Artificial Intelligence and Digital Transformation in Education. Utilising Disruptive Technology for a Better Society*. https://doi.org/10.1007/978-981-97-8638-1 [Open Access]



References

Stracke, C. M., Chounta, I.-A., & Holmes, W. (2024). Global trends in scientific debates on trustworthy and ethical Artificial Intelligence and education. In *Artificial Intelligence in Education. AIED 2024. Communications in Computer and Information Science*. https://doi.org/10.5281/zenodo.11518072

Stracke, C. M. et al. (2024): *What is Artificial Intelligence (AI)? How can I use AI ethically at university?* Edited by the German Network "Ethische Nutzung von KI". https://doi.org/10.5281/zenodo.10995669

Stracke, C. M., Chounta, I.-A., Holmes, W., Tlili, A., & Bozkurt, A. (2023). A standardised PRISMA-based protocol for systematic reviews of the scientific literature on Artificial Intelligence and education (AI&ED). *Journal of Applied Learning and Teaching, 6*(2), 64-70. https://doi.org/10.37074/jalt.2023.6.2.38

Huang, R., Tlili, A., Xu, L., Chen, Y., Zheng, L., Saleh Metwally, A. H., Da, T., Chang, T., Wang, H., Mason, J., Stracke, C. M., Sampson, D., & Bonk, C. J. (2023). Educational futures of intelligent synergies between humans, digital twins, avatars, and robots - the iSTAR framework. *Journal of Applied Learning & Teaching, 6*(2), 28-43. https://doi.org/10.37074/jalt.2023.6.2.33



References

Bozkurt, A., Xiao, J., Lambert, S., Pazurek, A., Crompton, H., Koseoglu, S., Farrow, R., Bond, M., Nerantzi, C., Honeychurch, S., Bali, M., Dron, J., Mir, K., Stewart, B., Costello, E., Mason, J., Stracke, C. M., ..., & Jandrić, P. (2023). Speculative Futures on ChatGPT and Generative Artificial Intelligence (AI): A Collective Reflection from the Educational Landscape. *Asian Journal of Distance Education, 18*(1), 53-130. https://doi.org/10.5281/zenodo.7636568

Stracke, C. M., Bozkurt, A., McGreal, R., & Zawacki-Richter, O. (2023). Open Educational Resources and their global needs, benefits and practices: The call for a future research agenda. *IEEE Bulletin of the Technical Committee on Learning Technology, 23(1), 20-23*. https://tc.computer.org/tclt/10-1109-2022-02003007 [ESCI]

Tlili, A., Burgos, D., Stracke, C. M., Mason, J., Denden, M., Altinay, F., & Nascimbeni, F. (2022). Impact of personality on educator attitudes towards open educational resources. *Knowledge Management & E-Learning, 14*(4), 444–465. https://doi.org/10.34105/j.kmel.2022.14.023 [SSCI, Open Access]



References

Stracke, C. M., Burgos, D., Santos-Hermosa, G., Bozkurt, A., Sharma, R. C., Swiatek, C., Inamorato dos Santos, A., Mason, J., Ossiannilsson, E., Shon, J. G., Wan, M., Agbu, J.-F., Farrow, R., Karakaya, Ö., Nerantzi, C., Ramírez Montoya, M. S., Conole, G., Cox, G., & Truong, V. (2022).
Responding to the initial challenge of COVID-19 pandemic: Analysis of international responses and impact in school and higher education.
Sustainability, 14(3), 1876. https://doi.org/10.3390/su14031876 [SSCI, Open Access]

Awarded by the National Institute for Digital Learning (Ireland) as Global Top 10 COVID-19 research in 2022!

Stracke, C. M., Sharma, R. C., Bozkurt, A., Burgos, D., Swiatek, C., Inamorato dos Santos, A., Mason, J., Ossiannilsson, E., Santos-Hermosa, G., Shon, J. G., Wan, M., Agbu, J.-F., Farrow, R., Karakaya, Ö., Nerantzi, C., Ramírez Montoya, M. S., Conole, G., Cox, G., & Truong, V. (2022).
Impact of COVID-19 on formal education: An international review on practices and potentials of Open Education at a distance.
The International Review of Research in Open and Distributed Learning, 23(4), 1-18.
https://doi.org/10.19173/irrodl.v23i4.6120 [SSCI, Open Access]



References

Stracke, C. M., Sharma, R. C., Swiatek, C., Burgos, D., Bozkurt, A., Karakaya, Ö., Ossiannilsson, E., Mason, J., Nerantzi, C., Agbu, J.-F., Ramírez Montoya, M. S., Shon, J. G., Inamorato dos Santos, A., Farrow, R., Wan, M., Santos-Hermosa, G., & Conole, G. (2021). How COVID-19 has an impact on formal education: A collective international evaluation of open education in distance learning. *Proceedings of the 14th Annual International Conference of Education, Research and Innovation (ICERI)* (pp. 4270-4275). https://doi.org/10.5281/zenodo.5764585

Truong, V., Denison, T., & Stracke, C. M. (2021). Developing institutional Open Educational Resource repositories in Vietnam: Opportunities and challenges. *The International Review of Research in Open and Distributed Learning, 22*(4), 109-124. https://doi.org/10.19173/irrodl.v23i1.5582 [SSCI, Open Access]

Stracke, C. M., & Skuballa, I. (2021). Using, analysing and evaluating eye-tracking at different educational levels: Towards an evaluation framework for impact assessment. *TEM JOURNAL - Technology, Education, Management, Informatics, 10*(2), 483-487. https://doi.org/10.18421/TEM102-01 [ESCI, Open Access]



References

Stracke, C. M., & Trisolini, G. (2021). A Systematic Literature Review on the Quality of MOOCs. *Sustainability, 13*(11), 5817. https://doi.org/10.3390/su13115817 [SSCI, Open Access]

Holubinka, K., Stracke, C. M., Forsman, P., & Juutinen, S. (2021). Virtual Internationalization in Higher Education: Design Reflections and Lessons Learned. *Zeitschrift für Hochschulentwicklung (ZfHE), 16*(2), 43-56. https://doi.org/10.3217/zfhe-16-02/03 [Open Access]

Stracke, C. M., van Dijk, G., Fasen, J., Lisdat, F., & Simoens, W. (2020). A Holistic Pedagogical Model for STEM learning and education inside and outside the classroom. In P. Zaphiris & A. Ioannou (Eds.): *Learning and Collaboration Technologies. Designing, Developing and Deploying Learning Experiences. LCT 2020, Part I, HCII 2020, LNCS 12205* (pp. 568–581). https://doi.org/10.1007/978-3-030-50513-4_41



References

Stracke, C. M. (2020). Open Science and Radical Solutions for Diversity, Equity and Quality in Research: A Literature Review of Different Research Schools, Philosophies and Frameworks and Their Potential Impact on Science and Education. In D. Burgos (Ed.), Radical Solutions and Open Science. An Open Approach to Boost Higher Education. Lecture Notes in Educational Technology (pp. 17-37). Springer: Singapore. https://doi.org/10.1007/978-981-15-4276-3_2 [Open Access]

Stracke, C. M., Downes, S., Conole, G., Burgos, D., & Nascimbeni, F. (2019). Are MOOCs Open Educational Resources? A literature review on history, definitions and typologies of OER and MOOCs. *Open Praxis, 11*(4), 331-341. https://doi.org/10.5944/openpraxis.11.4.1010 [ESCI, Open Access]

Stracke, C. M. (2019). Quality Frameworks and Learning Design for Open Education. *The International Review of Research in Open and Distributed Learning, 20*(2), 180-203. https://doi.org/10.19173/irrodl.v20i2.4213 [SSCI, Open Access]

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