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# UNESCO Guidance for generative AI in education and research and AI Competency Frameworks

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# UNESCO ICT Competency Framework for Teachers

VERSION 3



## Guidelines for ICT in education policies and masterplans



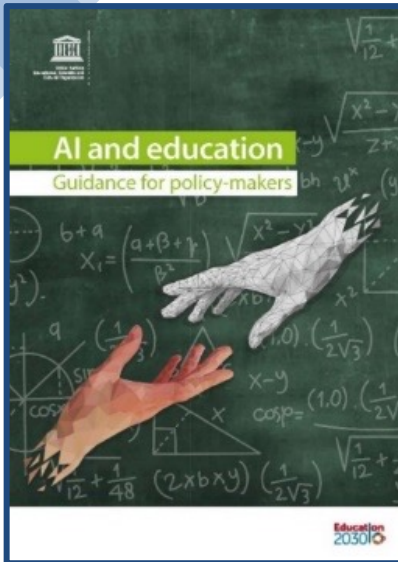
Education  
2030



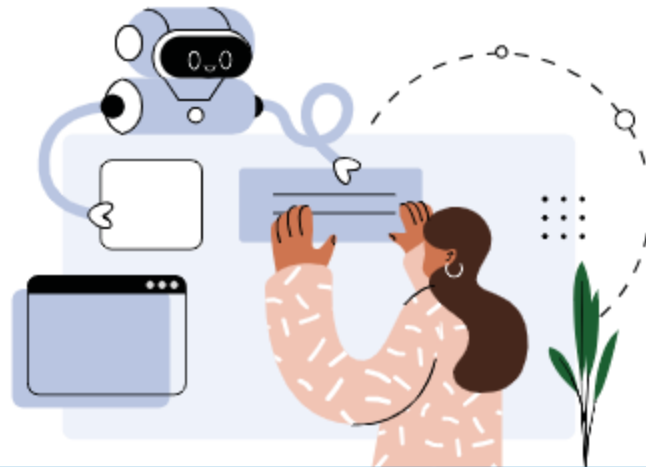
## The 2019 UNESCO Recommendation on Open Educational Resources (OER)

Supporting universal access to information  
through quality open learning materials





# Guidance for generative AI in education and research



# The evolving potential of generative AI

Automating output generation across ***all symbolic representations of human thinking***: natural language, images, sounds, music, software code

Enabling the delivery of final outputs by producing (semi-)finished knowledge products


Freeing humans from some categories of lower-order tasks

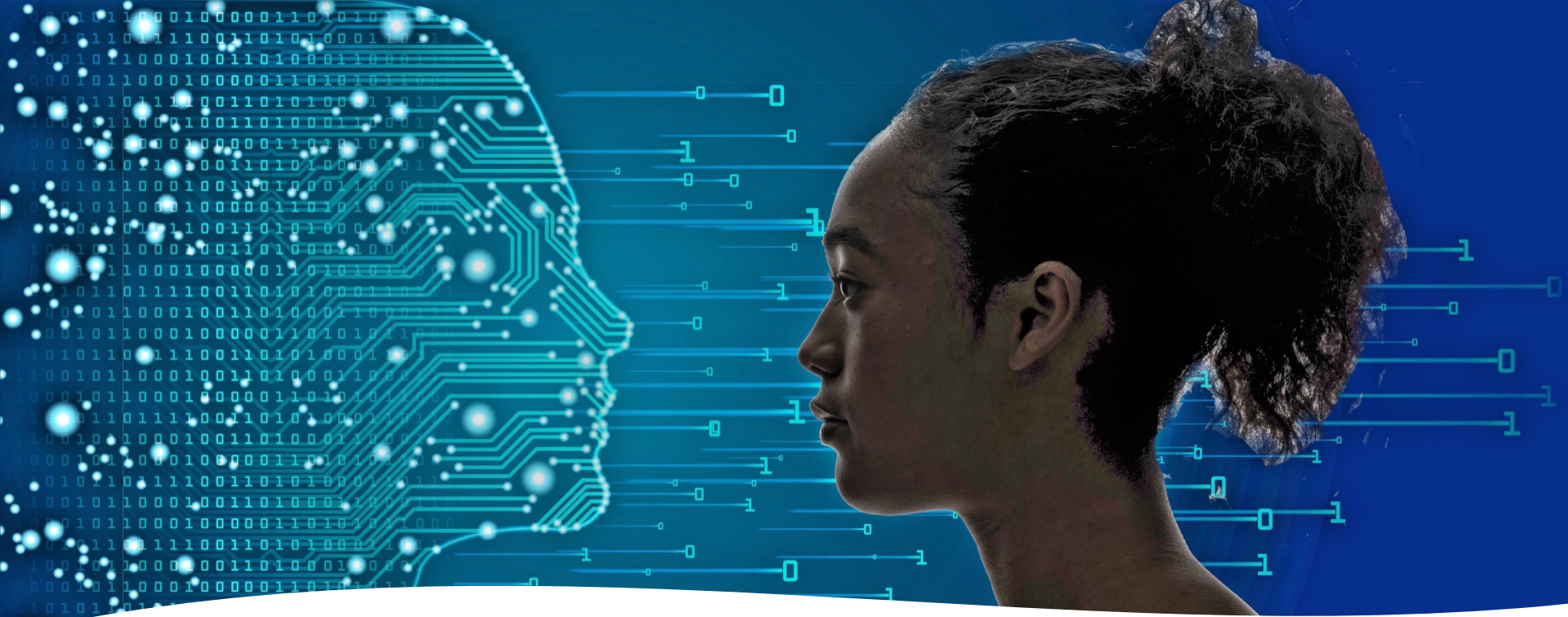


# Human-centred approach to AI



Supporting human capacities,  
explainable, predictable, human-controlled, human-accountable,  
capable of being shut down





# **Upholding core humanistic values**

- **human agency**
- **inclusion**
- **equity**
- **gender equality**
- **linguistic and cultural diversities**
- **plural opinions and expressions**

# Contents of the Guidance

- 8 controversies
- 6 steps to regulate generative AI
- Policies on building capacities
- Institutional validation
- Design of uses
- Reflection on long-term implications



# 8 controversies

Worsening digital poverty

Outpacing national regulation adaptation

Use of content without consent

Unexplainable models used to generate outputs

AI-generated content polluting the Internet

Lack of understanding of the real world

Reducing the diversity of opinions and further marginalizing already marginalized voices

Generating deeper deepfakes



# Regulating generic AI and generative AI in particular: Mapping of country actions (as of 13 July 2023)

Reflections on implications for curriculum and assessment		
Capacities for proper use of generative AI in education	Singapore	No response or N/A
Regulations on generative AI By 13 July 2023	China	No response or N/A
Adjusting copyrights laws (labeling AI-generated content)	EU, US, China	No response or N/A
Ethics of AI (including in education)	20+ countries	No response or N/A
National strategies on AI	67 countries	No response or N/A
General data protection laws	137 countries	No response or N/A



# Towards a policy framework in education and research

Promote inclusion,  
equity, linguistic  
and cultural  
diversity

Protect human  
agency

Monitor and  
validate

Develop AI  
competencies

Build capacities of  
teachers and  
researchers

Promote plural  
opinions

Test and build  
evidence base

Review implications



# Rethinking learning outcomes

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**Foundational knowledge and skills** adapted to the increasingly AI-rich environments.

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**Higher-order thinking skills** needed to harness AI and generative AI outputs.

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**Vocational skills** needed to work for and with generative AI.



# AI competencies for students and teachers



Draft AI  
competency  
frameworks for  
students  
and teachers

AI competency  
frameworks for  
students  
and teachers  
(under  
development)

## Progression levels



Understand



Apply



Create

## Aspects



### Students

Human-centred Mindset

Ethics of AI

AI foundations

AI skills

AI for problem solving



### Teachers

Human-centred Mindset

Ethics of AI

Foundation AI knowledge

AI skills

AI pedagogy

Professional development

# AI competency framework for students (under development)

Aspects	Progression		
	Understand	Apply	Create
<b>Human-centred Mindset</b>	Critical Reflections on AI	Safe and Responsible Use	Self-actualization in the AI Era
<b>Ethics of AI</b>	Human agency	Ethics by Design	AI Citizenship
<b>AI foundations</b>	Data, Algorithms, and Models	Programming and Data Analysis	Modeling and Visual Representations
<b>AI skills</b>	AI Techniques and Applications	AI Programming	Creating AI Products
<b>AI for problem solving</b>	Problem Scoping	Co-design	Co-creation and Feedback Loops

# AI competency framework for teachers (under development)

Aspects	Progression		
	Understand	Apply	Create
<b>Human-centred Mindset</b>	Critical views of AI	Contextual adoption strategies	Steering long-term impact
<b>Ethics of AI</b>	Human agency	Human-centred use	AI society skills
<b>Foundation AI knowledge</b>	“Algorithm and data literacy” or AI literacy	Use AI analytics	Coding and data models
<b>AI skills</b>	Test and use	Infusing uses	Integrating AI tools
<b>AI pedagogy</b>	AI for teaching	AI to deepen learning	AI for co-creation
<b>Professional development</b>	AI to assist administrative tasks	AI for curriculum design and delivery	AI empowering teaches



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**Thank you**

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