Fact sheet

Committee on Culture and Education/CULT
AIDA

Brief description of the issue

The committee's responsibility is to come up with ways to ensure the safe, yet effective implementation of AI technology into the fields of education. You will be tasked with raising the main concerns, to then create corresponding framework and guidelines. These are meant to protect our citizens whilst guaranteeing that they can benefit from all the advantages of AI and are not at a disadvantage in comparison to other users living under different legislation. Your responsibility will be to make of the EU a 'global standard-setter' in terms of AI implementation.

Key terms

Artificial Intelligence (AI) is the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.

Machine learning is a subfield of artificial intelligence (AI) that involves developing algorithms that allow computers to automatically learn from data and improve their performance on a specific task, without being explicitly programmed to do so. Machine learning algorithms can analyze large amounts of data, identify patterns, and make predictions or decisions based on those patterns.

Non-machine learning refers to the traditional programming approach where a programmer writes a set of instructions that a computer follows to perform a specific task. In this approach, the programmer defines the logic and rules that the program should follow to achieve the desired outcome.

Natural language processing (NLP) is a subfield of artificial intelligence (AI) that focuses on enabling machines to understand, interpret, and generate human language. It involves developing algorithms and models that allow computers to analyze and process natural language data, such as text or speech, and perform tasks.

Artificial intelligence in education (AIED) is an academic field of inquiry, established in the 1980s, that primarily researches AI tools to support learning (i.e. learning with AI).

Big data are large heterogeneous and volatile data sets, generated rapidly from different sources, that are cross-referenced, combined and mined to find patterns and correlations, and to make novel inferences.4 The analysis of big data is too complex for humans to undertake without machine algorithms.

Dialogue-based tutoring systems are AI-driven tools that engage learners in a conversation, typed or spoken, about the topic to be learned.

e-proctoring: The use of AI-driven systems to monitor learners taking examinations with the purpose of detecting fraud and cheating.

Profiling is the automated processing of personal data to analyse or predict aspects of a person's performance, economic situation, health, personal preferences, interests, reliability, behavior, location or movements.

Measures already in place

1. **!This table is not complete/up-to-date!**

TABLE 3: OVERVIEW OF POLICY GUIDELINES ASSOCIATED WITH AI IN EDUCATION

	APPROACHES		
	Independent	**Integrated**	**Thematic**
Argentina		Aprender Conectados (Ministry of Education, Argentina, 2017)	
China	Next Generation Artificial Intelligence Plan (Government of the People's Republic of China, 2017).		New ICT Curriculum Standards for Senior High School (Ministry of Education, People's Republic of China, 2017) Innovative Action Plan for Artificial Intelligence in Higher Education Institutions (Ministry of Education, People's Republic of China, 2018)
Estonia			ProgeTiger Programme (HITSA, 2017)
European Union	The Impact of Artificial Intelligence on Learning, Teaching, and Education (Tuomi, 2018)		GDPR (European Union, 2016, 2018) DigComp (Carretero et al., 2017)
Malaysia		#mydigitalmaker (Ministry of Education & Malaysia Digital Economy Corporation, 2017)	
Malta	Towards an AI Strategy. High-level policy document for public consultation (Government of Malta, 2019)		
Republic of Korea	Mid- to Long-Term Plan in Preparation for the Intelligent Information Society (Government of the Republic of Korea, 2016)		
Singapore			Code@SG Movement-Developing Computational Thinking as a National Capability (Infocomm Media Development Authority, 2017)
United Arab Emirates	UAE Strategy for Artificial Intelligence (United Arab Emirates, 2017)		
United States of America	National Artificial Intelligence Research and Development Strategic Plan (National Science and Technology Council, 2016)		

(https://unesdoc.unesco.org/ark:/48223/pf0000376709/PDF/376709eng.pdf.multi)

2. The Council of Europe's Committee of Ministers adopted a **recommendation on digital citizenship education in which a key focus was the application of artificial intelligence (AI) in educational contexts (2019)**:
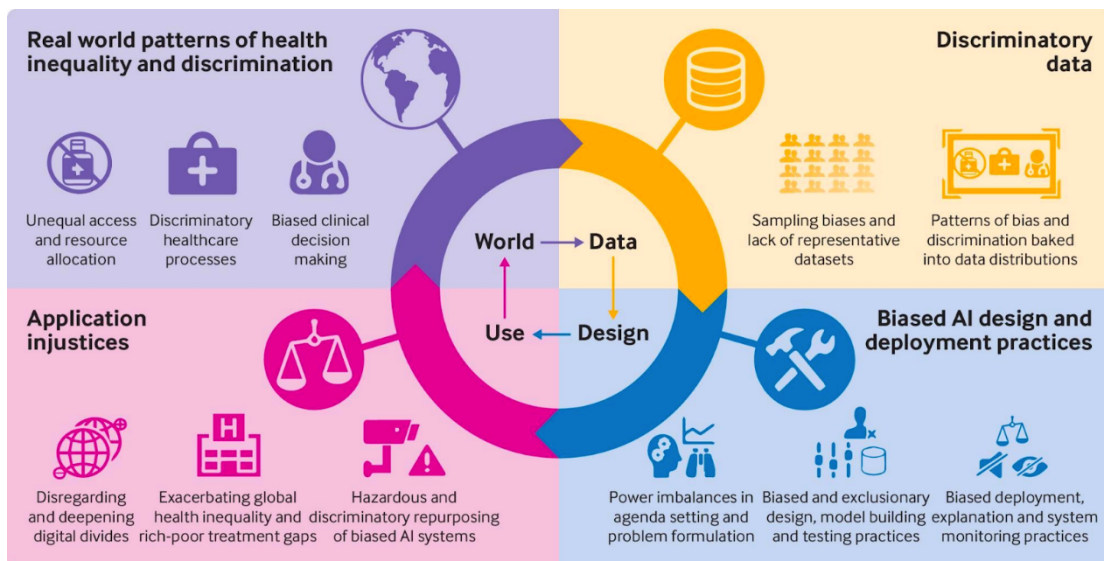
'AI, like any other tool, offers many opportunities but also carries with it many threats, which make it necessary to take human rights principles into account in the early design of its application. Educators must be aware of the strengths and weaknesses of AI in learning, so as to be empowered – not overpowered – by technology in their digital citizenship education practices. AI, via machine learning and deep learning, can enrich education [...] By the same token, developments in the AI field can deeply impact interactions between educators and learners and among citizens at large, which may undermine the very core of education, that is, the fostering of free will and independent and critical thinking via learning opportunities.' (Council of Europe 2019) (https://rm.coe.int/1680a236c0#:~:text=CM%2FRec(2019)10,)

3.   **AI Act** ('Proposal for a Regulation on a European approach for Artificial Intelligence In "A Europe Fit for the Digital Age"') => !**this act has been in discussion but has not yet been passed! (20/04/23)** (https://www.europarl.europa.eu/legislative-train/theme-a-europe-fit-for-the-digital-age/file-regulation-on-artificial-intelligence)

Statistical information and graphs on the issue topic

https://unesdoc.unesco.org/ark:/48223/pf0000232721 - teacher shortages data
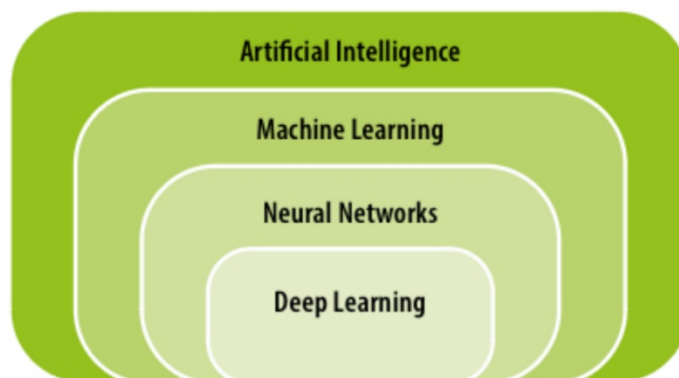

1.

2.   Potential roles of AI (ChatGPT specific) in education

Possibility engine	AI generates alternative ways of expressing an idea	Students write queries in ChatGPT and use the Regenerate response function to examine alternative responses.
Socratic opponent	AI acts as an opponent to develop and argument	Students enter prompts into ChatGPT following the structure of a conversation or debate. Teachers can ask students to use ChatGPT to prepare for discussions.
Collaboration coach	AI helps groups to research and solve problems together	Working in groups, students use ChatGPT to find out information to complete tasks and assignments.
Guide on the side	AI acts as a guide to navigate physical and conceptual spaces	Teachers use ChatGPT to generate content for classes/courses (e.g., discussion questions) and advice on how to support students in learning specific concepts.
Personal tutor	AI tutors each student and gives immediate feedback on progress	ChatGPT provides personalized feedback to students based on information provided by students or teachers (e.g., test scores).
Co-designer	AI assists throughout the design process	Teachers ask ChatGPT for ideas about designing or updating a curriculum (e.g., rubrics for assessment) and/or focus on specific goals (e.g., how to make the curriculum more accessible).
Exploratorium	AI provides tools to play with, explore and interpret data	Teachers provide basic information to students who write different queries in ChatGPT to find out more. ChatGPT can be used to support language learning.
Study buddy	AI helps the student reflect on learning material	Students explain their current level of understanding to ChatGPT and ask for ways to help them study the material. ChatGPT could also be used to help students prepare for other tasks (e.g., job interviews).
Motivator	AI offers games and challenges to extend learning	Teachers or students ask ChatGPT for ideas about how to extend students' learning after providing a summary of the current level of knowledge (e.g., quizzes, exercises).
Dynamic assessor	AI provides educators with a profile of each student's current knowledge	Students interact with ChatGPT in a tutorial-type dialogue and then ask ChatGPT to produce a summary of their current state of knowledge to share with their teacher/for assessment.

(https://www.iesalc.unesco.org/wp-content/uploads/2023/04/ChatGPT-and-Artificial-Intelligence-in-higher-education-Quick-Start-guide_EN_FINAL.pdf)
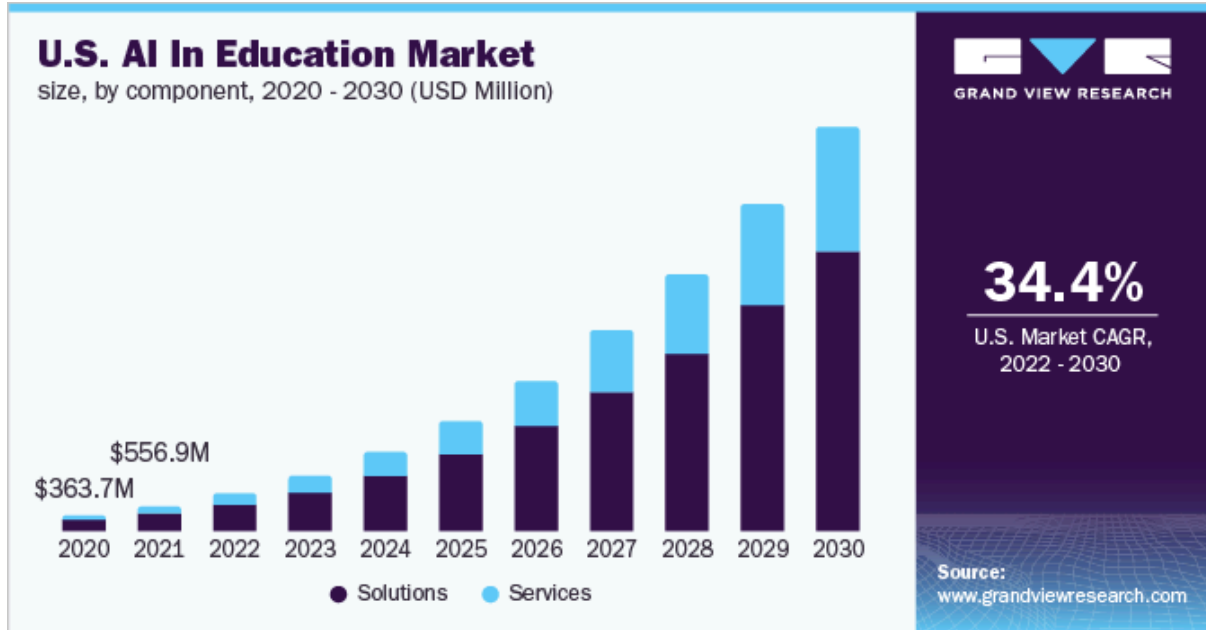
3.

FIGURE 1: THE RELATIONSHIP BETWEEN ARTIFICIAL INTELLIGENCE, MACHINE LEARNING, NEURAL NETWORKS AND DEEP LEARNING.

(https://unesdoc.unesco.org/ark:/48223/pf0000376709/PDF/376709eng.pdf.multi)

4.   AI in education market size

(https://www.grandviewresearch.com/industry-analysis/artificial-intelligence-ai-education-market-report)