The ethical use of artificial intelligence (AI) and data in teaching and learning for Educators

Helping teachers and educational staff to better understand and engage in the ethical use of AI and data

AN INITIATIVE OF THE
Digital Education Action Plan 2021-2027
#EUDIGITALEDUCATION #DEAP

Education and Training

MARIA GKOUNTOUMA
EU Policy Assistant
European Commission, DG EAC.C4

WHAT IS THE DIGITAL EDUCATION ACTION PLAN DOING?

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ADDRESSING EU PRIORITY

Digital Education as a **strategic priority at EU level**

BUILDING ON SHORT AND LONG TERM

Addressing the implications of the COVID-19 crisis for education and training, while outlining a **long-term vision for high-quality and inclusive education and training** in the digital age

SHAPING A COMMON APPROACH

Integrated and comprehensive approach towards digital education

DEFINING A WORKING PATH

Common understanding and vision around high quality and inclusive digital education supported by cooperation, good practice exchange, evidence, peer learning and research

OFFERING ACTIONABLE OPPORTUNITIES

Leveraging different EU funding opportunities:
Erasmus+, Horizon Europe, Digital Europe Programme, Recovery and Resilience Facility, Connecting Europe Facility, etc.

DIGITAL EDUCATION ACTION PLAN:
THE BROADER CONTEXT

Achieving the European
Education Area
by 2025

Digital Decade and the 2030
Digital Compass Targets

European Year of Skills 2023

Declaration of Digital rights and
principles

Better Internet for Kids
Strategy

Next Generation EU

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P2

PRIORITY 2

Enhancing
digital skills and
competences
for the digital
transformation

Boosting
cooperation and
exchange via
**the Digital
Education Hub**

PRIORITY 1

Fostering the development of a
high-performing digital education ecosystem

01 **Structured Dialogue with Member States** on digital education and skills

02 **Council Recommendation on blended learning approaches for high-quality and inclusive primary and secondary education**

03 **European Digital Education Content Framework**

04 **Connectivity and digital equipment for education**

05 **Digital transformation plans** for education and training institutions

06 **Artificial intelligence and data use** in education and training

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PRIORITY 2

Enhancing digital skills and competences for the digital transformation

ACTION 07 — **Guidelines** for teachers and educators to foster digital literacy and tackle disinformation through education and training

ACTION 08 — Update the **European Digital Competence Framework**

ACTION 09 — **European Digital Skills Certificate**

ACTION 10 — **Council recommendation** on improving the provision of digital skills in education and training

ACTION 11 — **Cross-national collection of data** and an EU-level target on student digital skills

ACTION 12 — **Digital Opportunity Traineeships**

ACTION 13 — **Women's participation in STEM** studies and careers

THE NEED FOR ACTION 6:
WHAT DOES THE CURRENT SITUATION TELL US?

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AI in Education is no longer a distant reality

- using AI application to train and learn foreign languages

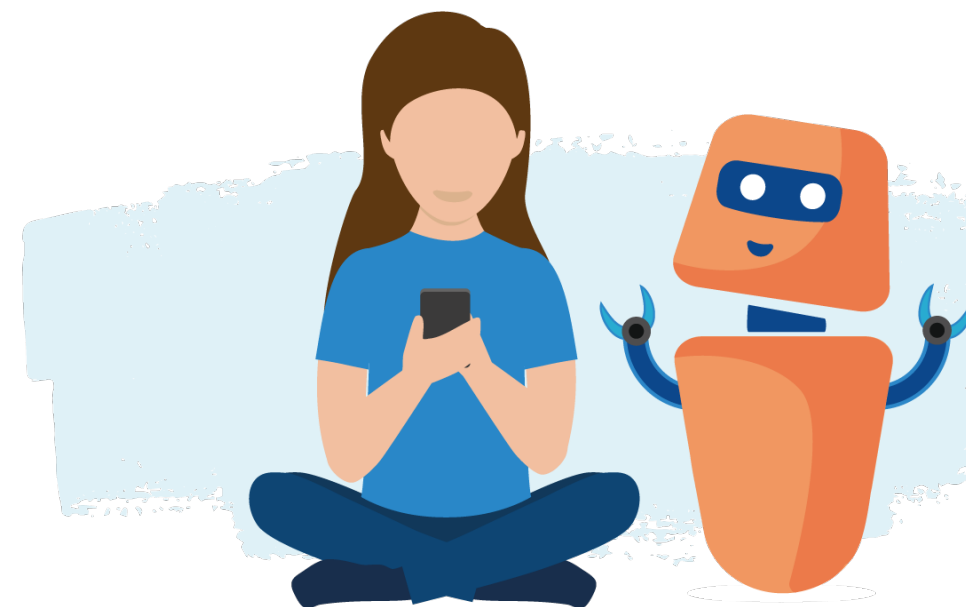- using adaptive exercises to differentiate teaching and learning

AI has a great potential to enhance education

but, it lacks in depth analysis of impact and could raise ethical considerations

AI is part of digital skills to be acquired

- by teachers and learners

- by the end of the Decade

Education and training has a key role to play

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Not starting from scratch: **building on...**

- Funding of grassroots AI projects through the Erasmus+ and Digital Europe Programmes

- Updated Digital Competences Framework (DigComp 2.2)

- ... and various initiatives on AI and data in education taken by Member States or International Organisations

...and aligned with other EU actions and initiatives

- "Ethics Guidelines for Trustworthy AI" prepared in 2019 by the High-Level Expert Group on AI (AI HLEG)

- Assessment List for Trustworthy AI (ALTAI)

- European Commission proposal on a legal framework for AI (AI Act)

- Shaping Europe's Digital future: Data Act

- European Declaration of digital rights and principles

THE ETHICAL GUIDELINES **ON THE USE OF AI AND DATA IN TEACHING AND LEARNING** FOR EDUCATORS

These guidelines aim to provide practical support and guidance for teachers/educators to understand the potential that AI applications and data can have in education and to raise awareness of the possible risks – even unintentional ones - so that they are able to engage positively, critically and ethically with AI systems and exploit their full benefit.
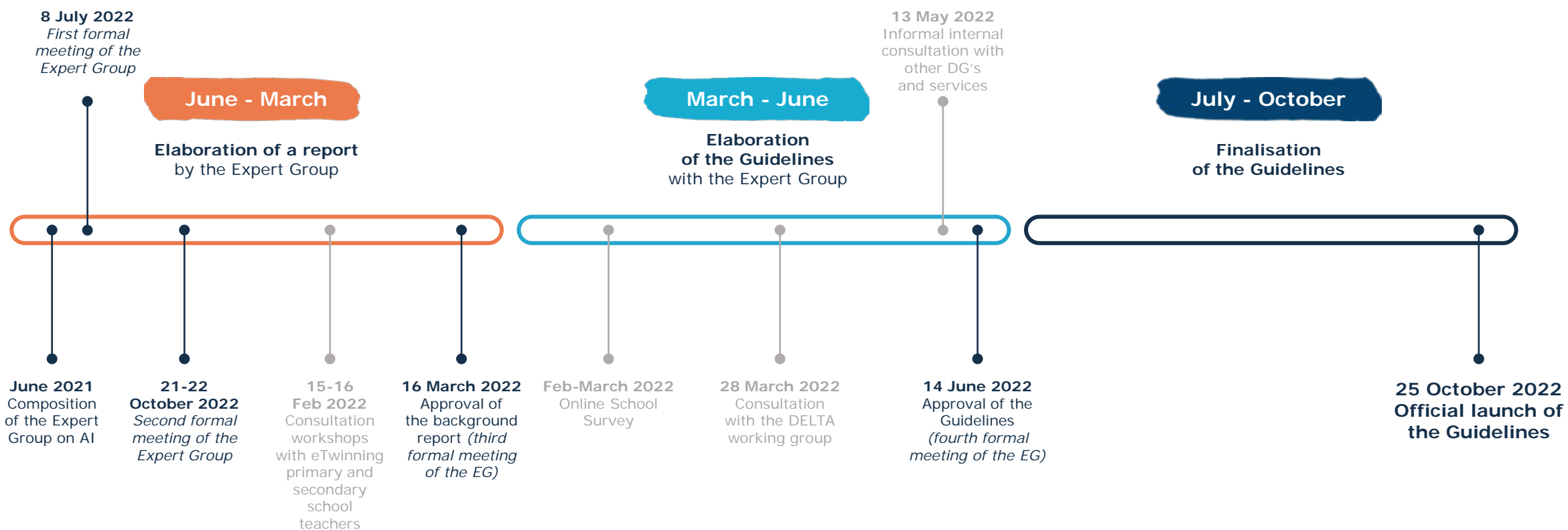
They contribute to the following objectives in education and training:

1 **Fostering an understanding** of how AI and data use can be achieved in teaching and learning

2 **Defining educational purposes** and identifying AI and data that can help to solve them

3 **Underpinning ethical considerations and requirements** on how to use AI and data positively and critically at school

4 **Providing guiding examples** to enable a constructive dialogue on AI systems' ethical use in education and training

5 **Developing emerging competences** for confident and relevant use of AI resources and tools

THE ETHICAL GUIDELINES **ON THE USE OF AI AND DATA IN TEACHING AND LEARNING** FOR EDUCATORS

Developed and endorsed by a dedicated **Commission Expert Group on Artificial intelligence (AI)** and data in education and training

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8 July 2022
First formal meeting of the Expert Group

13 May 2022
Informal internal consultation with other DG's and services

June - March

Elaboration of a report by the Expert Group

March - June

Elaboration of the Guidelines with the Expert Group

July - October

Finalisation of the Guidelines

June 2021
Composition of the Expert Group on AI

21-22 October 2022
Second formal meeting of the Expert Group

15-16 Feb 2022
Consultation workshops with eTwinning primary and secondary school teachers

16 March 2022
Approval of the background report *(third formal meeting of the EG)*

Feb-March 2022
Online School Survey

28 March 2022
Consultation with the DELTA working group

14 June 2022
Approval of the Guidelines *(fourth formal meeting of the EG)*

25 October 2022
Official launch of the Guidelines

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What do they include?

Examples of AI and data use in education

- to teach students
- to support their learning
- to support teachers
- to support diagnostic or system-wide planning

Ethical considerations and requirements

to refer when starting or processing a project based on AI and data

Guiding questions

and approach to raise the awareness and community engagement and plan for effective use of AI and data in school

Emerging competences

for ethical use of AI and data

Glossary terms applied to education

EU policy overview on AI

and the regulatory framework as well as further information

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Who are the guidelines for?

- **The guidelines target teachers and educational staff in formal education, mainly in primary and secondary levels of education**, with some or no prior experience on using AI and data in teaching and learning

- **The guidelines can inform the broader educative community** (students and parents, policymakers), as well as all the stakeholders involved in digital education

How to make the best use of them

- **Identify concrete examples** and generic use-cases to reflect and start with

- **Raise awareness** of the possible benefits, risks and challenges to avoid misconceptions

- Consider the ethical background and **use guiding questions**

- **Consider emerging competences**, glossary terms applied to education

- **Raise community engagement** and planning for effective use AI and data in School, aligned with EU policy on AI and the regulatory framework in place

- **Develop concrete use-cases and share your experience**

IDENTIFY CONCRETE EXAMPLES AND GENERIC USE-CASES

Some examples can be the following, without being exhaustive:

Student teaching

1. **Language learning applications**

2. **Dialogue-based tutoring systems**

3. **Intelligent tutoring systems** (no 2 and 3 involve a sequence of tasks performed after individualised instructions and feedback-their difference is in whether there is a dialogue with the IT system of not).

Student supporting

1. **Exploratory learning** environments multiple visual representations of a theme or topic, including for example Virtual Reality, 3D representations etc.)

2. **Formative writing assessment** (automated feedback on assignments, for example in online quizzes)

3. **AI-supported collaborative learning** (for example group formation in a classroom based on students' performance and level of learning at a given time)

Teacher supporting

1. **Summative writing assessment**, essay scoring (AI identifies areas of problem in learning, gives targeted feedback etc.)

2. **Student forum monitoring** (key/word-based search and identification of problematic areas judging from the writings of the students in the forums)

3. AI teaching assistants

4. Pedagogical resource recommendation (targeted selection of resources, according to individualised needs)

System supporting

1. Educational data mining for resource allocation (teacher assignment in classes, grouping students, timetabling)

2. Diagnosing learning difficulties (data and learning analytics identify students who have cognitive or emotional difficulties or learning gaps due to long absences etc.)

3. Guidance services (through students' competences profiles, the system steers them towards specific studies, future professions etc.).

ETHICAL CONSIDERATIONS AND REQUIREMENTS
TO FORMULATE GUIDING QUESTIONS FOR EDUCATORS

4 key considerations...

Key considerations that underpin the ethical use of AI and data in teaching, learning, and assessment:

- Human agency
- Fairness
- Humanity
- Justified choice

7 key requirements...

Based on the AI HLEG Ethics Guidelines for Trustworthy AI (ALTAI):

- Human agency and oversight
- Transparency
- Diversity
- Non-discrimination and fairness
- Societal and environmental well-being
- Privacy and data governance
- Technical robustness and safety
- Accountability

HOW TO GET INVOLVED?

Check the guidelines, use them in school and give us your feedback

Starting or dealing with AI and data for educational purposes:

Plan for effective use of AI and data in School

- Review current AI systems and data use
- Initiate policies and procedures
- Carry out a pilot
- Collaborate with stakeholders
- Monitor the operation of the AI system

Raise awareness and community engagement

- Discuss and share with colleagues
- Collaborate with other schools
- Communicate with parents, learners and school community
- Keep up to date

Consider emerging competences for ethical use of AI and data

(based on the 6 areas of DigComp 2.2)

- Professional engagement
- Digital resources
- Teaching and Learning
- Assessment
- Empowering Learners
- Facilitating learners' digital competence

Interested to know more?

Get in touch by email:
EAC-DIGITALEDUCATION@ec.europa.eu

Find out more:
European Education Area (education.ec.europa.eu) | Digital Education Action Plan (2021-2027)
> education.ec.europa.eu/focus-topics/digital-education/action-plan/action-6?

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