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**NOTE**

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From: General Secretariat of the Council  
To: Permanent Representatives Committee/Council

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Subject: Artificial intelligence in education and training  
- *Policy debate*  
*(Public debate in accordance with Article 8(2) of the Council's Rules of Procedure)*  
*[proposed by the Presidency]*

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Following consultation of the **Education Committee**, the Presidency has prepared the attached discussion paper, which is submitted as the basis for the policy debate to take place at the Education, Youth, Culture and Sport Council meeting on 8 November 2019.

## **Artificial Intelligence in education and training**

### *Presidency discussion paper*

A strong and vibrant economic base, social inclusion and sustainable growth are of key importance for a prosperous Europe and the wellbeing of its citizens. As the world moves into the digital era, the ongoing technological advances are rapidly changing our lives now as well as our perspectives for the future. Streaming services, ride-sharing apps, smart homes and personalised healthcare are already here. Artificial Intelligence (AI) is transforming every aspect of our lives. By accelerating decision-making, improving processes and personalising services, AI has a remarkable potential for boosting our economy, increasing our wellbeing and making our society more inclusive and sustainable. Therefore, Europe needs to be a frontrunner in tapping into these opportunities.

Less has been said on what applying AI actually means or on what kind of social, political and ethical considerations its use involves. It's important for European citizens to be able to trust in how AI is being developed, applied and used by businesses and government. How EU Members States choose to embrace AI will impact outcomes for whole Europe.

### **Education and training in AI**

AI holds great economic, social, security, and environmental promise – and education is no exception. Besides revolutionising education itself, AI also challenges education policy-making by impacting on the skills and competences needed to stay employable and to lead a meaningful life. Whilst the demand for specific AI skills and for high-level expertise is increasing in the labour market, all European citizens need to have the necessary understanding of AI to be able to conduct their everyday lives. No one should be left behind as technology is integrated more deeply and more widely in the personal, professional and public spheres.

According to the 2019 Digital Economy and Society Index (DESI), 43 % of the EU population had an insufficient level of digital skills in 2017. A 2018 survey conducted by McKinsey identified lack of talent with appropriate skill sets for AI work as one of the most significant barriers to AI being adopted by organisations. Fostering talent and opportunities for skills development were also highlighted in the EU's Coordinated Plan on AI.

The need to adapt is pressing, if Europe wants to respond to arising learning needs and embrace the digital era. A more comprehensive and systemic approach to education and training is needed to create an enabling environment for continuous, lifelong learning. Personalised learning paths, which are built on data and designed to meet the needs and goals of each learner, could lead to a new understanding of lifelong learning as a continuous learning process supported by flexibility, openness, and digitalisation. The Digital Education Action Plan of January 2018 has set concrete steps towards a future-oriented education fit for the digital age and included pilot actions on how artificial intelligence can enhance education and training systems.

### **AI in education and training**

AI could help to solve big educational challenges, such as achievement gaps or retention rates, could support a more responsive curriculum design and provide more flexible and personalised ways of learning through more versatile learning provision and customised support and guidance. AI has the potential to remove barriers to accessing education, as well to automate management processes, analyse learning patterns and optimise learning processes with a view to improving learning outcomes. As AI gets better at performing routine tasks, it may help both learners and teachers to concentrate on the things that humans do best.

Interoperable, accessible and quality data are a key building block for the development of learner profiles and paths across the European Education Area, where all citizens should be able to benefit from the best education and training. The availability of data can be improved by adopting a human-centric approach, which also serves in increasing the trust of individuals towards the use of their data. The idea of the human-centric approach is to empower individuals to access their personal data and manage its reuse. This empowering of individuals enables data flows, data-driven personal services and better-informed decisions.

At the same time, consideration must be given to the ethical aspects of AI and to putting in place adequate oversight mechanisms in order to prevent AI from being misused or from behaving in unpredicted and potentially harmful ways. The Ethics Guidelines for Trustworthy AI developed by the European Commission's High Level Expert Group and published in April 2019 is the first step towards AI that is morally responsible, as well as legally and ethically defensible.

A common values base, ethical frameworks and explainable AI are central in applying AI to education in order to improve trust and transparency. Translating general ethical guidelines into concrete actions that impact day-to-day decisions may, however, be difficult for individual sectors. Therefore, for principles to become actionable, they must be discussed in depth and put in the appropriate context if the decisions taken are to be understood and properly explained. In addition to the learners, we also need to place an emphasis on the teachers and educators – in order to exploit the potential of artificial intelligence, to understand the risks and responsibilities and to adopt pedagogical strategies that foster creativity. Close cooperation with research should be further strengthened.

In light of the above, Ministers are invited to exchange views and share experiences in relation to the following questions:

1. What kind of education and training policies and measures at EU and Member State level should be developed to steer AI design and use? How can we ensure that AI benefits society as a whole and that Europe can compete successfully at global level?
2. What actions could be taken by the EU together with Member States in order to enable and advance the use of AI in education and training now and within the next 10 years?

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